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Gleanings in Bee Culture



The River Dart as it wends its way past the aparies of the Carthusian Monks,
Buckfast Abbey, Devonshire, England.

The A. I. Root Co., Medina, O., U. S. A.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXV

October 1, 1907

No. 19

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GLEANINGS IN BEE CULTURE

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Vol. XXXV.

OCTOBER 1, 1907.

No. 19



ON BEHALF of honey-producers in general, I arise to move a vote of thanks to GLEANINGS and Messrs. Poudel and Peirce for doing their part toward getting prices out of the ditch.

YOU ADVISE my encouraging farmers near me to sow buckwheat, Mr. Editor, p. 1188. Rather not. Just now, Sept. 13, I'm having a fine flow of very light honey, and I should not like buckwheat mixed with it.

REPLYING to a correspondent, I don't use shipping-crates. If I shipped in smaller quantities I would; but I wouldn't make the crates: I'd buy them. No, the Root Co. does not list them. I don't know why, but they make them.

A QUEEN which has been regularly occupying seven frames will have contained in them the proportion of about one frame of eggs, two of unsealed brood, and four of sealed brood. [This is about the proportion as we find it.—ED.]

BEG PARDON, Mr. Editor, I didn't say drone-cells were invariably narrowed at the mouth before worker-eggs were laid in them. I only said I had never seen them otherwise, and raised the question whether others had. Have you? Page 1189.

FRIEND A. I. ROOT, you ask, p. 1093, that some one with "experience in getting rid of bees where there was no sale for them" would tell how to get the honey and get rid of the bees. I'm afraid very few have had such experience; and, although I don't come in the prescribed class, I would suggest doubling up in fall or spring. That will reduce the number of colonies, and perhaps secure more surplus than "taking up" in the fall.

THE *Schweiz. Bztg.*, p. 269, reproduces from GLEANINGS the cut of the extractor run by power by E. D. Townsend, and also a picture of one that has been run five years by a Swiss bee-keeper, Herr Bracher. The multitude of mountain streams in Switzerland favors cheap water-power, as also electricity. [Where water under pressure is available it affords the nicest power.—ED.]

DOOLITTLE is quoted in *Schweiz. Bztg.*, p. 275, as saying that he has tried all the plans for prevention of swarming, and concludes that swarming is natural, and so he will make no further effort to prevent it. That must be ancient history. Nowadays I think Doolittle is in the band-wagon with the rest of us. [You believe, in other words, that Doolittle now believes that swarming can be kept under control. Indeed he does: for he has written a treatise on that subject.—ED.]

AN EXTREMED correspondent wants a Straw about keeping a few hundred sections. Keep them where salt will keep dry—any dry warm place, the warmer the better. High up in a kitchen's a good place. If afraid of worms, pile them in supers, an empty super on top, in that a saucer in which you pour two or three tablespoonfuls of bisulphide of carbon, and cover up without breathing it. Look out for fire—highly explosive. [Good advice, every word of it.—ED.]

WM. McEVOY says, *Canadian Bee Journal*, p. 245, that it is more important that every bee-keeper should know the dark stain-marks of foul brood on the lower side of the cells, where it is dried down in dark scales, than that he should be familiar with the stringy character of the brood. In treating diseased colonies he never starves them—always feeds well. [McEvoy is pretty nearly right. It is important to know whether an old comb is disease-bearing, and therefore unfit to go back into a hive.—ED.]

THIS YEAR I killed a few queens for no other reason than that they were born in 1904, and so had already past through three winters. I never did a thing of the kind before, and I'm not so dead sure of the wisdom

of it. Some of my 1904 queens did excellent work, and you couldn't tell from their appearance whether they were one year old or three. If I had allowed the bees to supersede them, don't you believe it would have been favoring longevity in their successors? As Mr. Beuhne, an Australian bee-keeper, says, "We can't have short-lived queens and long-lived workers." [While some more than three-year-old queens are better than some yearlings, is it not true that the *average* of those more than two years old should be replaced by younger queens? It is a well-recognized fact in the poultry business that it does not pay to keep a hen after the first year. She does her best work in egg-laying the first season. The same holds true to a certain extent with queens. While admitting this, we can not deny that some three-year-old queens are worth keeping for honey alone, another year. Conversely, it is true that many three-months-old queens ought to have their heads pinched. The fact is, the practical producer must use judgment in applying the rule of replacing his queens every two years.—Ed.]

THOSE TWO QUEENS in the same hive in the old apiary. One was a 1904 queen with all wings clipped; the other a 1905 queen with wings clipped on one side. August 19 they were put into a hive in the same cage, with a splint in the candy. Aug. 24 the 1905 queen was out, laying; the 1904 queen still in cage. Let 1904 out on comb. Aug. 27, saw 1904, but could not find 1905, nor could I find 1905 at any time since. Now, was that not strange that the younger queen should be rejected, especially after being first accepted? [This seems to support the old rule that, of two normal queens in one colony, one will be missing in a short time—not because the bees put one out of business, but because there was a duel between the two queens, and one was killed. Perhaps the 1904 was the more vigorous, and hence the victor.—Ed.]

So far I had experimented with old queens—thought I'd try young ones. I put in the same cage two that had been laying two or three days. Pretty soon they showed fight, and I separated them. It might have been different if each had been in a separate cage. [We are getting a little light. Perhaps *old* queens won't fight when *young* ones will. We should like to hear from others on this point.—Ed.]

PROF. COOK, I don't see but you and I are pretty nearly agreed on hive-entrances and openings for ventilation. You believe in an upper opening for ventilation sometimes, p. 1076, and I believe the same, only to a greater degree. You speak on that page as if I advocated making two regular entrances to be used by the bees. Look again at Straws, p. 755, and you will see that in some way you have misread. I there objected to your saying, when speaking of ventilation, p. 312, "It is, without doubt, best to have only the one opening to the hive." But I don't have two entrances. Almost never do the bees use an entrance any other than the regular

entrance; and my bees don't glue shut the ventilating openings. In 1000 cases I never knew one so closed unless too narrow for a bee to pass, and a bee will always glue a crack it can't get through. Even if they always tried to glue up the openings, I would not consider that conclusive against such openings. Closing them helps toward swarming. The bees favor swarming. I don't.

I wonder if you wouldn't like better the plan of sliding the upper story backward to make an opening instead of your plan of raising the upper story, which, by increasing space, favors burr-combs.

SOMETHING out of whack about quotations in "Honey Markets." A difference of 6 or 8 cents a pound between places so near together, and a higher quotation in Frisco than New York don't look right. Fact is, the dictum of those men who make quotations has almost every thing to do with settling the price, and those 16-cent men are not doing the square thing by us producers. With the advance in prices in general, and a shortage in the supply, any thing like 16 cents for comb honey is out of all reason. Talk about honey being a luxury, and any thing more than 16 cents being prohibitive! The fact is, honey is an economical article of food, and with our pure-food laws there's no reason why it may not take its proper place as a staple article—at 25 cents much cheaper than butter, even if you call it a luxury. Years ago 25 or 30 cents was not a prohibitive price, and it wouldn't be now. Luxuries are cut out when pinching hard times come, but times are not pinching. Never, perhaps, was there a time when people in general were more able to indulge in luxuries than now—never more willing, and they're willing to pay the price. The whole thing is, that a few men set the pace and we producers stand it. Gentlemen who do the quoting, please give us a square deal. [That's right, doctor. These men mean to give us a square deal; but they do not appreciate the fact that the crop is very short; that fruit is scarce; that adulterated honey can not pull down the price of good honey as formerly. There has been a marked advance in all food products except honey. While it has advanced in some markets to a fair price it has made only a slight gain in others. This is not as it should be.—Ed.]

MR. GEO. W. BERCAW, formerly of Ohio, but now a resident of California, paid The A. I. Root Co.'s factory and GLEANINGS office a friendly visit in the early part of September. Mr. Berkaw is the proprietor of the Aliso apiaries at El Toro, Cal., and reports the honey crop on the coast as somewhat short, but that in other respects conditions were good on the Pacific Slope. Now that prices are higher, the western bee-keepers, when they do get a good crop, will make a small fortune, and they ought to after waiting so long.



THE middle of September has been characterized by a peculiar hot spell of weather. The hot wave has extended throughout the South as well as the North.

SECRETARY OF AGRICULTURE WILSON recently said that one man owned 30,000,000 acres of timber lands in the Western States. This largely explains the present high price of lumber.

By the peremptory order of R. M. Washburn, Dairy and Food Commissioner of Missouri, oleomargarine has been barred out of that State. We are hopeful he will soon get to work and bar out glucose for the same reasons that oleo has been prohibited.

SWISS bee-keepers' convention took place this year at St. Gallen, a beautiful Swiss city, around which are quite a number of bee-keepers. Switzerland is now well to the front, as befits the native land of Huber, the prince of bee-naturalists.

THE *American Grocer*, following up a Los Angeles report, says California honey—the best in the land—will be conspicuous by its absence this season. If any person doubts this statement let him read the San Francisco honey-market reports or any other reliable reports.

A RECENT trip of the editor down to the Jamestown Exposition has shown an unusual amount of goldenrod in bloom along the route. The frequent rains have made them unusually vigorous. So much goldenrod as well as other bloom this season ought to give the bees a nice stimulus for winter. Indeed, we already have reports of some nice fall flows.

WE have received the May, June, and July numbers of the new Italian bee journal, *L'Avvenire Apicolo*, published at Rome, Italy, by Professor Josty. It is considerably larger than GLEANINGS, and has 16 pages of reading-matter well printed on excellent paper, and bound with red cover pages. It is a very ambitious journal, and we hope it will succeed. Italy already possesses two bee journals; but Rome, once the mistress of the world, surely ought to be able to sustain a good one. W. K. M.

IN connection with the Uncompahgre irrigation project in Colorado, already referred to in this journal, we note that there will be six beet-sugar factories started on this project alone, each one costing not less than a

million dollars, or \$6,000,000 in all. The estimated total cost of the whole project is about \$5,200,000, so that the beet-sugar factories alone exceed the entire cost of the project. This will give an onlooker some conception of the beneficent effects of Uncle Sam's policy in reclaiming the arid lands, for beets will form only a fraction of the crops raised. There will certainly be quite a number of bee-keepers on this same project, and fruit-growers by hundreds. W. K. M.

THE Chilean government has just authorized and subsidized the construction of a railway the entire length of that country from the Peruvian border southward to a point far south of the city of Valparaiso. The total length of the line will be 2000 miles, running through a country very similar to California, and probably as good for bees. At the present time Chile is a heavy exporter of honey and beeswax; but the new railway will serve to increase greatly the production. A recent letter to GLEANINGS from a Florida correspondent visiting Rio Janeiro stated as a fact that one steamer—the one previous to his—brought 2000 barrels of honey through the Straits of Magellan *en route* to the European markets. Beeswax in large amounts is also shipped. W. K. M.

THE national irrigation congress at Sacramento cordially endorsed President Roosevelt's policy with respect to public lands, irrigation, and national forests. We are glad to see this, as there has been some strong adverse criticism of his policy in the West, more particularly in Idaho. Whatever others may think, we think bee-keepers all over the country will agree with the irrigation congress, as the government policy seems certainly the very best from the bee-keeper's standpoint. Forest reserves where no fires are allowed ought to be in most sections an excellent range for bees, and certainly the great irrigation projects give the bee-keeper a chance to keep bees under the very best conditions imaginable. We are done with the era of reckless spoiliations of our natural resources to suit a few individual promoters. This is the age of home-building. W. K. M.

THE FOOD CHEMISTS OF GERMANY ON SUGAR HONEY.

VERY recently the Food Chemists of the German Empire held their sixth annual convention at Frankfurt-on-the-Main. Professor von Raumer, of the University of Erlangen, gave a lecture on honey, laying particular emphasis on the different methods of its adulteration and the special means adopted for detecting the same. Prof. Raumer is an expert in this line of research.

IN this same connection the German and Austrian Bee keepers' Association at its meeting held in the same city was unanimously of the opinion that the feeding of bees with saccharine substances for the purpose of increasing the production of honey, and not from necessity, should be considered a clear

case of adulteration. It may be explained that in Germany the prices obtained for comb and even extracted honey are so very high that it pays to adulterate in this way provided the pure-food authorities do not catch the offender.

W. K. M.

A CHEAP WINTER CASE.

WE believe that a very good serviceable winter case can be made out of ordinary light building-paper or even a heavy grade of manilla if oiled. The top of the hive should first be covered with several folds of newspaper, and then this manilla or building-paper of suitable size should be laid on top, neatly folded around the ends and sides, and tied. Be sure to make the folds so they will shed water, not catch it. We will have an illustration showing the right and the wrong way in our next issue.

SEASON REPORTS.

WE give below a brief summary of the crop reports lately received. These do not necessarily represent conditions for the whole States named, as they come from the producers, and are, therefore, merely local in character.

Enough for wintering..... Central Station, W. Va.
Light early flow; good fall flow, Nashville, Ill.
Fair flow..... Roswell, N. Mex.
Very light flow..... Paxico, Kan.
Very light flow..... Atlica, Ohio.
Good fall flow..... Akron, Ohio.
Fair fall flow..... Hopdale, Ohio.
Crop almost entire failure..... Edmore, Mich.
Good flow..... Bradshaw, Neb.
Fair fall flow..... Hull, Iowa.
One-fourth crop.....

FLORIDA'S PURE-FOOD LAW.

THE *Florida Agriculturist* was, after all, in error, and it is a fact that the legislature of that State did pass a pure-food law in conformity with the national law.

I am sending you a copy of the "pure-food" law passed by the last legislature. Please correct your statement (on page 1129, Sept. 1), as copied from the *Florida Agriculturist*. They made a bad break.

Bradentown, Fla., Sept. 5. E. B. ROOD.

Many thanks, friend Rood. The new law was approved by the governor June 3, and went into effect on September 1. We understand that Arkansas, Texas, South Carolina, West Virginia, Tennessee, and Oklahoma can now be included among the pure-food States. It will not be very long before every one of the galaxy of States will join the column of the pure-food advocates.

A NATIONAL PURE-FOOD CONGRESS AT WASHINGTON, AND WHAT DR. WILEY IS DOING.

DR. WILEY, the pure-food expert of the United States Department of Agriculture, has recently returned from France, where he acted as judge of the pure-food exhibits at the Bordeaux exposition. While in France he sounded the government on the subject of a universal standard for foods, with favorable results. In England also he had a

favorable response, so that it is probable a world's congress of pure-food officials will be held in Washington at an early date to fix a standard for all foods. This congress may have far-reaching effects on the trade of the world, and in its life-saving aspects may be regarded as one of the most beneficial moves made in the economic history of mankind. The movement can not be otherwise than a benefit to the person who produces purely natural foods. Probably the best feature of it will be the stability given to the prices obtained for natural products, as it will be no longer possible to depress prices by resorting to artificial products or imitations. Not only is it dishonest to sell inferior products for the real goods, but quite frequently the substitute undermines (slowly) the health of the persons who have to consume them.

W. K. M.

PARCELS POST ONCE MORE.

The following, by the *Oklahoma Farm Journal*, puts the whole argument for a parcels post in a nutshell:

In this issue many references are made to the desirability of a parcels post and the advantage it would be to the farmers. Possibly all may not understand what is meant by the parcels post. An illustration will make it clear.

If you lived in Colombia, Costa Rica, Guatemala, British Columbia, Honduras, Mexico, Nicaragua, Salvador, or Venezuela, a package with a length and height combined of less than six feet, and weighing not more than eleven pounds would be sent to you from the United States for twelve cents per pound.

But since you live in the United States, and the express companies are better represented than the people in Congress of this land of the free and home of the brave, you can't send a package weighing more than four pounds by mail, and you must pay sixteen cents per pound, even if the package is to go only to the next postoffice.

It doesn't take any argument to convince farmers that they need the parcels post, and that they need postal currency. They will get it when they go after it. The everlasting right is on their side; but the right doesn't count for much unless you get it into action. But with action to enforce the right, things may be made to happen.

THE REASON WHY CAGED QUEENS ARE SMALL.

M. A. WATHELET says, in *Le Rucher Belge*, that if a queen is removed from a colony where she was laying, and with abdomen expanded with eggs is placed in a cage, the abdomen will, by degrees, diminish in size as the eggs are dropped. After a few hours, as she no longer receives the digested and stimulating food produced by the workers, she becomes very small, and, after 24 hours, is no larger than a virgin queen, and is incapable of recommencing egg-laying until she has passed some days in a colony. If in the spring a laying queen is replaced by a queen that has been confined in a cage, the bees easily notice the change, and her introduction will be difficult. It is quite different if the queen to be introduced is taken out of a colony where she is laying. In such a case the change is hardly noticed; and, with the precaution of guarding against the robbers, a little smoke and powdering the bees with flour, the introduction is easy.

Queens reared in nuclei in the same apia-

ry are always accepted, whereas those from another apiary are not always, notwithstanding all the precautions taken. From this it will be seen that the best time for introducing a queen that has come in a cage is when the queens have ceased egg-laying, say after September 15, because the size of the stranger will be about the same as that of the queen which is to be replaced, and the bees will not be surprised at her not laying eggs.—*British Bee Journal*, by NEMO.

WHY HIGHER PRICES ARE BOUND TO PREVAIL.

ONLY three or four years ago cotton sold in our southern cities at less than 7 cents per pound; to-day the cotton-growers are actually expecting their product to reach shortly the 15-cent mark. This condition is largely due to intelligent and concerted action on the part of the southern farmers, who for three years have fought a determined fight for higher prices, chiefly through two strong organizations backed by public opinion. This causes *Farm and Ranch* to remark:

Labor is cheap if it holds itself cheap. The spirit of democracy looks higher constantly. The laborer of the cotton-field can never secure more than a bare existence for himself and family until he holds his labor at a premium. This he may do in pricing his cotton. His decision will determine the plane of his living. Our great trouble in the South is to get people, white people, to put a proper value on their labor, and demand a fair daily and yearly wage as represented in the price demanded for raw cotton. . . . This journal has, therefore, cast in its lot with the man and against the dollar, and will use its influence against the breaking-down of the higher prices for farm labor now obtaining, and will continue the fight for higher prices of farm products. Along this road lies the future greatness of the South and America. Higher living and nobler thinking are not possible for those who are dumb brothers to the ox. Let us uphold the American standard of living, and continue to be the world's greatest civilizing power.

For years we have had cheap honey from the South to keep down Northern prices; but it is reasonable to believe this will no longer be the case, and we hope the Southern bee-keepers will not again allow themselves to sell honey at a lower figure than their Northern rivals. There is nothing to be gained by it.

W. K. M.

THE TROUBLES OF MOLASSES-MAKERS.

As we have already hinted, the cane-syrup producers of Louisiana are very much dissatisfied with the decision of the National Board of Food and Drug Inspection to insist on the proviso that cane syrup offered for human consumption shall not contain more than 350 milligrams of sulphur dioxide per kilogram (.035 per cent), and as a result a conference of the parties concerned was arranged for on Sept. 6. Prof. Blouin, of the Louisiana Experiment Station; Congressman R. F. Broussard, and D. D. Colcock, of New Orleans, represented Louisiana at a meeting in the offices of the United States Department of Agriculture, when Dr. Wiley, Secretary Wilson, and the Board of Food and Drug Inspection were all present.

The Louisiana delegation argued their case well, instancing the case of the molasses squad, already referred to in GLEANINGS, as

proving the present-day molasses was first-class human food. They were unable, however, to convince the officers of the government that an increase of the amount of sulphur dioxide was desirable, and the decision of the Board will be allowed to stand. The Louisiana people are not at all satisfied with this decision, and apparently intend to ignore it.

Beet-sugar manufacturers make no attempt to sell their molasses, preferring to convert it into alcohol, and the New Orleans folks could do the same, so that the financial loss can not be very great. There is no difficulty in making fine syrup from the juice of the sugar-cane stem; but the molasses here referred to is a by-product of the sugar trade. Bee-keepers are greatly interested in this controversy, as three-fourths of all the molasses sold in this country is practically barred by this decision, and it would be several years before the independent syrup-makers, who produce syrup as we do maple syrup from maple sap, could satisfy the demand. Dr. Wiley, backed by Secretary Wilson, holds that syrup can be made from cane which has none of the undesirable sulphur dioxide, and *syrup* is superior to molasses in any case. It looks to us as though the government will win this controversy. If it does, the honey market will be better than it has been for many years, as the chief competitor of the honey-producer will be taken off the market to a great extent by this action of the pure-food officials of the national government.

W. K. M.

VARIABLE FLAVORS OF HONEY; WHY BEE-KEEPERS SHOULD PLACE MORE EMPHASIS ON THE FACT.

IT is not generally known by the consuming public that there are as many honey flavors, and just as distinct, as flavors to apples and pears, grapes, and other kinds of fruit. The average consumer seems to have the idea that any honey that does not taste like what was produced "off from the old farm" is bogus. A person reared in a basswood-clover district regards as impure a honey that is mild in flavor, like the mountain sage of California; indeed, he very often will class it as nothing more nor less than sugar syrup. The unsophisticated in a buckwheat district feel a suspicion toward any honey that does not have the characteristic taste and color of that section. Another, who is accustomed to the delightful, minty taste of alfalfa can scarcely be persuaded to believe that a willow-herb or a palmetto honey is the genuine product from the hive.

Throughout this broad domain we find that bee-keepers have been catering to the peculiar flavor to which the locality is accustomed to such an extent that the consumer thinks there is but one flavor to honey. Mr. Selser says that he can not sell for his bottling trade any thing but a clover honey; indeed, he will reject any thing that has any basswood or other flavor in the clover, "because," he says, "my trade won't have it."

It is obviously impossible to sell all alfalfa in an alfalfa district, or mountain sage in California, a mesquite or guajilla honey in Texas, a palmetto in Florida. Necessarily these honeys will be exported to other territories. The duty, therefore, devolves upon bee-keepers to educate the public that there are as many flavors of honey as there are of the various kinds of fruit. Would it not be wise for every bee-keeper to obtain samples of the different table honeys where his prospective customers can taste and see them? It not infrequently happens that a brashy, unpleasant flavor of honey which one has and can not sell will tickle the palate of some one customer, and, by letting them all test these honeys, we may be able to find an outlet for some undesirable stock, and at the same time educate the whole community to the fact that honeys have flavors like candies and fruit. The sooner the consuming public recognize this general fact, the less difficult will it be for us to dispose of imported honey in times when our own stock gives out.

For example, suppose there is a scarcity of white clover in the locality, and it is difficult to purchase any of it elsewhere; and suppose, again, that plenty of good alfalfa can be obtained at a fair price. If the locality had already been educated to the fact that there is a variety in flavors, the consumers would readily take the alfalfa when offered.

The fact is, the public needs to know that all pure honeys are not alike. It ought to know that there is good honey and poor honey, and some bad-flavored honey. It ought to know that there is such a thing as alfalfa, mountain sage, and mesquite, etc., as well as clover and basswood. Perhaps one says he doesn't like any honey, when the fact is he has never had a taste of mountain sage or alfalfa. Give him these and we might make a consumer and a customer.

PREPARATIONS FOR WINTER.

Those who live in the Northern States should look over their colonies and see whether they have the requisite amount of stores to pass through the winter. An eight-frame hive ought to have at least six combs well filled, or the equivalent of stores scattered through the eight. If not so filled, the colony should be fed a mixture of granulated sugar and water mixed cold in equal proportions. The sugar should be gradually poured into the water, stirring vigorously until all cloudiness disappears. The process may be hastened somewhat by using hot water.

If you have not already made arrangements for wintering outdoors you should do so at once. While double-walled hives stand at the head for outdoor wintering, a single-walled hive may be practically as good by using an outside winter case large enough to telescope down over it. Folds of old newspaper should be laid on top of the hive, then the case slipped down, making a snug close fit. It is desirable to leave off the regular hive-cover, because the majority of them project over at the front and rear. A thin

board cover should then be substituted, the same width and length as the hive itself. The entrance should be contracted down to $\frac{3}{4}$ x 8 inches, and when cold weather comes on it should be narrowed down to about two inches. Occasionally the entrance should be raked out to remove any dead bees that may have accumulated; for if it should become clogged it would be almost sure to result in the death of the colony.

It would be well to lean a board, *a la* Doolittle, against the front of the hive (leaving openings at both ends), and keep it there during the winter. Mr. A. J. Halter, of Akron, O., has tested the principle, and finds it to work admirably in keeping bees from flying out on days with an alluring sunshine, but with a temperature so low that thousands of bees would be chilled to death.

Mr. C. H. W. Weber, of Cincinnati, has a device to accomplish the same purpose that looks as if it might be a good thing.

NATIONAL CONVENTION TO BE HELD AT HARRISBURG.

GENERAL MANAGER FRANCE has sent us the following notice of the convention of the National Association:

The National Bee-keepers' Association will hold its annual convention at Harrisburg, Pa., Oct. 30 and 31. Low railroad and hotel rates are promised, fuller information in regard to which will be given later.

It is expected that a special feature will be made of the question-box, and all members are asked to send questions which they would like to have discussed. If they wish, they may state whom they would like to have answer their questions. Questions may be sent to the secretary, J. A. Green, Grand Junction, Colo., or to General Manager N. E. France, Platteville, Wis.

Space will be provided for exhibits; and those having apparatus, supplies, or products they wish exhibited may, if they wish, send them to Prof. H. A. Surface at the State Capitol building, who will see that they are installed properly.

In another letter Mr. France writes that, on account of the Jamestown exposition, tickets can be bought at very low rates, with stop-over permits, including that at Harrisburg, Oct. 30 and 31. The round-trip fare from Chicago to Jamestown Exposition for a ten-day ticket, with stop-off at Harrisburg, is \$17; and for a fifteen-day ticket \$22.25. The rates are much cheaper by way of the exposition than to Harrisburg direct.

The National Association is becoming more and more national in character as well as in name. According to the annual report for 1906, the membership in four States exceeds the 200 mark. Wisconsin has 308 members; Illinois, 285; California, 217; New York, 210. Four more States have over 100 members each - Pennsylvania, 164; Minnesota, 125; Missouri, 123; Texas, 112; Michigan and Iowa have 96 and 76 members respectively. Ontario, Canada, has 53. The rest of the membership is distributed among 34 States. These figures are doubtless exceeded at the present time, as Mr. France's list on May 18, as reported through the *American Bee Journal*, was 2346 - a substantial increase over the number given in the last annual report.

Pennsylvania is one of the great States for bee-keeping, and it is to be hoped that there will be a good attendance at the convention.



THE SEASON.

California, like the whole country, had a very cold backward spring. We had reason, from the generous and timely rains of the winter, to hope for and to expect a great honey year. The cold weather kept both bees and plants from work. The bees were often held to the hives, and the nectar-glands refused, in the chilling atmosphere, to produce the coveted sweets. Later the warmth was more in evidence, and we shall get some honey. I find that several of our bee-keepers have secured about half a crop. I presume that we may claim about that for our State. We were wont in the olden time to say that, with good rains in winter, we were sure of a good honey year; but we now must add that these must as surely be followed by warmth and sunshine as the honey-plants burst into bloom.

THE OLD BOYS.

I wish to thank most heartily my good friend A. I. Root for the kind words regarding my friend and old student, Prof. P. G. Holden. Our old students are, like our children, ever dear to us, and few things touch us so pleasantly as words of commendation of their lives and work. I have often thought with the greatest satisfaction of the splendid services of many of our old Michigan Agricultural boys—men like Holden, of Ames, Iowa, who has done such fine work in breeding seed corn of high value; and of Davenport, of Champaign, Ill., who has done masterful service of the same kind; and of Bailey, of Cornell, New York, whose grand researches in almost all lines of horticulture have brought to him and to his *alma mater* honor and praise from all parts of the world. I might name many others who have done admirable work and are greatly honored.

Why is it that these men have done so well? It is due in large part to the great earnestness, ability, and enthusiasm of those first grand teachers—men like Abbott, Miles, Thurber, and Kedzie, who threw their whole being into their work, and inspired their students to like hard work. In those early days the students had all to work three hours daily on the farm or in the garden, and this gave or helped to give habits of industry, a spirit of thrift, and a practical trend that has helped powerfully to win success as they stepped forth into the world. We may all rejoice at the interest that the public is now taking in technical studies and work, in our grammar and high schools, for it will do much to help the boys and girls after they step forth into the work-a-day world. If we could add to this good wholesome employ-

ment mornings and evenings and in vacations, such as is found on the farm, we would give to our young people, the boys and girls, that for which I have ever devoutly thanked God was a part of my early boyhood and youth.

The Michigan Agricultural College, the first of our agricultural colleges which were to push for the newer and better study and training, was most fortunate in its men and in its methods, and the whole country owes it a debt of gratitude which I think is recognized the country over.

THE EUCALYPTS.

I am pleased to report that there is an increasingly large number of the various species of eucalyptus-trees being planted in our region from year to year. It is being found that there is good money in a good plantation of this kind. I saw the statement the other day in one of our reliable papers that it was thought it paid as well to grow the eucalypts as to grow oranges. This is, indeed, high praise, as the orange has been surprisingly profitable the last few years. The bee-keeper may well rejoice at this favorable consideration of the eucalypts in our rural economy. We are more and more impressed with these trees for honey. It is well known that we get all of our gums from Australia. They bloom there, of course, in summer, which comes in December, January, and February. When we bring them here, north of the equator, they are sorely perplexed, and hardly know how to behave. Their hereditary instincts say blossom in winter, but their feelings are favorable to pushing out the bloom in the warm days of early spring. The result is we find them blooming at all times of the year. There is hardly a month when we may not find these trees (some species) in blossom. The honey from these trees is of good quality; and, coming at such varied times, it is splendid for stimulation, as our bees can fly at all seasons, and they are likely to find a banquet spread in the eucalyptus groves at any and all seasons. As we are likely to have good warm and even hot days in midwinter we see that all conspires to help the bee-keeper. I am led to this expression from seeing bees swarming on eucalyptus bloom the last few days.

THE RUST FUNGI.

We are all more or less familiar with the various fungi that produce rust. We have seen it on the wheat and other grains, and have seen the deeply colored shirtsleeves of the old-time harvest-men as they came from binding the sheaves of grain. The grain rusts were remarkable for living on different kinds of plants, while many rusts live in all the several stages of growth and development on the same kind of plant. The asparagus rust is a late comer into our country, and is so serious that it has banished asparagus-growing in many sections of the country. It is found by Prof. Ralph Smith that this rust can not thrive in a climate where there

is little on no dew. In the famous Coachella Valley, contiguous to the great Salton Sea, where I believe bee-keepers will find a region unrivaled for their business, the atmosphere is so dry that asparagus will thrive in face of this rust. This, then, will make asparagus growing very popular in this valley. This is the more true as there are few crops that pay better.

It is an interesting fact that our bees utilize these rusts, as they collect the spores, for food. Like the pollen of flowers, these spores are rich in proteid food, and so are just what the bees require. In the Coachella Valley the bees will not be able to gather rust spores from asparagus; but in the great plantations of asparagus and alfalfa, where ten crops are raised in a season, they will be able to get abundance of both pollen and honey. I know of few flowers from which the bees gather pollen more abundantly than from the asparagus. I feel sure that in the Coachella and Imperial Valley bee-keepers are to find localities that will leave little to be desired. The new county (Imperial) has voted that no liquor may be sold in its limits—another recommendation.



SECURING BEES IN TIME FOR THE HARVEST.

"I wonder if Doolittle ever had some of his colonies of bees give him a much better yield of honey than did other colonies."

"Certainly he has; and in turn I wonder if Brown ever had things turn out that way at the end of any honey season."

"Yes, Brown has, and that is the reason I am over here to-day to have a little talk with you. I ran across Smith yesterday, and in our conversation he made this remark: 'All practical observing apiarists know that much depends on having control of the bees and concentrating their efforts toward honey-gathering while honey is to be had.' This set me to thinking, and resulted in my coming over to see you."

"Did you believe what he said?"

"I did not know just what to believe. Do you believe that there is truth in such a statement?"

"Well, yes, perhaps so; but if all practical observing apiarists do so know, the most of them are as silent as the tomb regarding the matter."

"What makes you say that? Smith spoke right out about it."

"I said it because one thousand words have been written on wintering bees, feeding bees, uniting bees, preventing after-swarms,

clipping queens' wings, etc., to where one word has been on the subject which Smith tells you all practical apiarists know about."

"That does seem a little strange, I admit."

"It certainly does. If they had known about these things why have they not told the world about them, and not been writing all the while about something of lesser value?"

"But what do you say in the matter?"

"I contend with Smith that the control and concentration of bees with an eye on the honey harvest not only has much to do with the success or non-success of any apiarist, but I go still further and say that it has *nearly all* to do with the matter of success or failure of the person keeping bees."

"That is a strong assertion, and I should like to know how you can figure it out."

"Do you remember where we started?"

"Yes—about a part of our colonies giving a greater yield of honey than others."

"Correct. And if you had been a close observer you would have ascertained that those colonies which did the best for you in honey the past season were those colonies which controlled and concentrated their bees toward the *honey* end of the hive rather than the *bee* end."

"What do you mean by that expression?"

"I mean that it so happened that the bees which gave you your best honey yields came up to a condition of control and concentration equal to the occasion, of their own accord; and had you known about these matters you could very largely have brought *every* colony up to where it would have done as well as the best."

"Do you mean it?"

"Yes. And I go still further, and say that Mr. Smith left out one of the *great big* factors in the matter by not including, in his talk with you, securing the bees in time for the harvest, coupling that with the control and concentrating; and the securing the bees in time for the harvest should lead the other two in the bargain."

"This matter is leading out into broader fields than I expected when I came."

"Indeed the field is broad; for unless we secure a full and overflowing working force *just in time for the harvest*, control and concentrate as much as we will, we shall fail of securing *first prize* from the harvest."

"But Smith claimed we should always have our colonies strong."

"Undoubtedly. And that is much better than never to have any of them strong; for if all are always strong, surely they will be strong at time of harvest. However, had you carefully examined those colonies which gave you your best yields in honey you would have found that they were those which were not the strongest during the whole of the season, but that they were such colonies as come up to their maximum strength *just* at the beginning of the honey-flow, and then in addition saw fit to control and concentrate during the whole of the flow."

"What do you mean by that, 'control and concentrate,' the way you now put it?"

"Just this: If a colony of bees with the maximum number arrives in this condition with the swarming fever on just as the honey-flow commences, they will, as a rule, give less in results than will a colony with fewer bees without the swarming fever; but with the swarming instinct held in abeyance, or under control, this mighty army of bees will roll up a great record for themselves and their keeper, especially if their energies are concentrated on the securing of honey rather than in a still further spreading of their brood with a view of a still further increase of bees."

"But what harm does a still greater increase of bees do?"

"It would do no harm if you lived in a locality where there was a continuous flow of nectar from the time white clover commenced to give the bees a supply till the end of fall flowers; but *you* are living in Central New York, where we have a dearth of nectar after clover, or after basswood, where either of these gives the white-honey crop; and if the bees are allowed to spread themselves for bees, or they do so spread themselves, rather than for honey, much of the honey gathered during the flow will be used in feeding an extra amount of brood, which, in turn, will become only consumers of the gathered and stored honey which would otherwise go on the ledger account of the keeper."

"Well, surely this is a broad subject. I had not even thought of some of these things before I talked with Smith. But how can these things be accomplished?"

"Quite largely through the race of bees we keep."

"What race is best?"

"The Italians are the most easily controlled."

"But that is only one factor."

"I know. But after their control by the apiarist till the flow of nectar is on, then it is their disposition to concentrate toward the honey part rather than toward the rearing of more bees."

"Are not the Carniolans equally good?"

"I have not found them thus in this locality, for the reason that, with the flow of nectar, they will go to breeding more largely instead of concentrating toward honey. In fact, some of the colonies of these bees which I have had consumed the larger part of the honey they gathered in brood, so that, when fall came, I did not have a pound of surplus; and, still worse, I had to take, from the Italian colonies, frames of stores to give to the Carniolans so they might not starve before spring."

"But how do you manage the Italians so as to have all colonies in the condition you desire at the time of the honey-flow?"

"To tell you this would take more time than is at my command just now, as I have an appointment I must meet at two o'clock this afternoon. Have you GLEANINGS for 1906?"

"Yes."

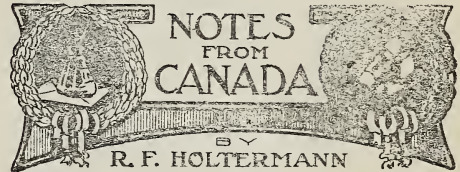
"Well, you will find what I consider the best plan that I know of given in the serial

running through many of the numbers for that year."

"But a part of these numbers are lent out, so I do not have it all together."

"If you can wait a little time, the serial is to be published in book form this fall or early winter, so I am informed, and then you can procure it of The A. I. Root Co."

"I am glad to hear this, for I have wanted it in book form ever since the serial was published."



WINTER STORES.

In localities where there has been a light flow of honey, and, in consequence, the bees have gathered a great deal of pollen with the honey stored in the combs for winter, it would be well to feed the bees sugar stores, say not less than 8 or 10 lbs. to carry them through all or at least the early part of the winter. Feed as soon as the brood-chamber is free from much brood, and the date is Sept. 20, or, at the latest, Oct. 1.

TWO ENTRANCES TO THE BROOD-CHAMBER.

Not considering that every one else should take the same interest in my views that I do, I will forgive Prof. Cook for writing in GLEANINGS that I advocate two entrances to a hive. I may enter an action against him for so slandering my character as a bee-keeper (unless he makes a full and public retraction). He probably thinks of the ventilation in the super, which the bees do not use as an entrance unless there is brood in the super.

NO QUEEN-EXCLUDERS.

This summer, owing to having more colonies than usual I have had to run some without queen-excluders between the brood-chamber and super. For years I have considered this objectionable. My views are unchanged upon this matter, but some others in the apiary who before thought otherwise do not now want to run bees without the excluder.

ONTARIO BEE-KEEPERS' CONVENTION.

The next annual meeting of the Ontario Bee-keepers' Association will be held in Toronto at the time of the fruit, flower, and honey show, Nov. 14 to 18. The exact date has not yet been fixed. We expect to have with us Mr. L. A. Aspinwall, Jackson, Mich., President of the National Bee-keepers' Association, and Mr. S. D. House, Camillus, N. Y. We shall, of course, be very much pleased to have as many of the United States frater-

nity as are willing or can even be compelled to come. An active interest is being taken in the convention by Ontario bee-keepers.

CALIFORNIA HONEY.

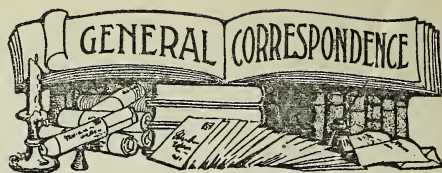
Why is California honey 7½ cts. per pound when other good honey is 11 and 12? Is the quality so much different, or did the light not shine upon our western friends quite as soon? During the last ten years honey has been getting down to an absurd price, and it is to be hoped bee-keepers will not allow the price to get down to the same figure again. *Keep up the retail price.* As soon as you drop the retail price the wholesale must follow. People will not push your goods for nothing. Paste that in your hat.

THE PRESENT POSITION OF BEE-KEEPING.

In my twenty-seven years' experience in bee-keeping I have never seen so remarkable a season in many respects as the past. After two winters and two honey seasons very adverse in Canada, and probably a considerable portion of the United States, we have only one colony where, three years ago, we had four. In Ontario, probably two thirds of the apiaries visited by the six foul-brood inspectors have been found to be diseased. Some found a less percentage, others a greater. It is well that the change came no later than it did, or some sections would not have had any bees left to inspect. The ground is very far from being covered yet, and it will take all the energies of the six inspectors next year to cope with the disease. The two foul-brood diseases have been discovered; but, happily, the disease Dr. Phillips calls European foul brood has been rare, or at least not much has been discovered. Where, however, it has broken out its spread and ravages have been much worse than the well-known and more common foul brood.

Honey prices have been so peculiar that it would take any one all his time guessing the outcome. Honey has been sold in August in many cases at as low as 7 to 8 cts. per lb. in 60-lb. tins; then it went up in price until it reached the price recommended by the committee of the Ontario Bee-keepers' Association. A great deal of the honey has been retailed by bee-keepers at home; and jobbers who held back from paying high prices have been left with but a limited stock. Canadian trade is very particular, and the *low-priced* foreign honey has not been able to make much headway on our market, although the duty is only 3 cts. per lb.

Our Danish contemporary, *Den danske Bivavls-Tidende*, contains the J. E. Hand article on catching the queen without moving the frames, which appeared in our issue of June 15. The illustrations, though copied, are very good. Our contemporary always gives us full credit for all copied articles; and so long as this is the case our friends are welcomed in helping themselves to the good things of GLEANINGS.



HONEY-EXTRACTORS.

The Value of the Gasoline-engine to Run Them; Time, Honey, and Money Saved.

BY E. W. ALEXANDER.

In telling of this particular part of our business the writer finds himself embarrassed by drifting continually to the personal pronoun; so, let me say at the beginning that I have no desire for notoriety, and I have often wished that I had never signed my name to any thing that I have ever written on the subject of bee-keeping. But the past is as it is, and we can use it only as a schooling to help the future.

I now wish to write a few lines direct to my brother competitors of extracted honey. The ever increasing demand for this product of the apiary is inducing many to turn their attention toward its production; and I hope to see you all so situated that you can produce it in the future cheaper than it has ever been in the past; for this reason, and this only, I write this article. If you have read the advertising columns during the past year in our bee-journals as you should, you must have noticed descriptions of an outfit for doing the most laborious part of producing extracted honey by gasoline power. Many people naturally hesitate in regard to investing their money in new implements, preferring to let (if I may be allowed to use some street slang) the other fellow invest his money first, then if it is all right they are ready to invest also. Now, my son and myself were just that other fellow that was ready to test this outfit to its very core. With three first-class extractors in perfect working order standing in our extracting-room we bought an improved eight-comb extractor and a gasoline-engine, to do our extracting.

Well, as to results, the first test we gave it was to extract about 3000 lbs. of last year's capped candied honey. The combs were mostly new and brittle, having been foundation last year, had never contained any brood, neither were they wired in their frames, as we have not a wired comb in our apiary. When the extractor was started and the comb-baskets began to hum like a buzz-saw, I at once knew that the old candied honey would have to leave the combs, which it did quite clean; but I expected that the combs and their frames would then and there dissolve partnership; but, not so. They were so well supported by the comb-baskets that we could not find a cracked or broken comb in the lot. The reversing of the reel is so perfect that you don't have to stop either engine or extractor in order to do this part. Taking it

as a whole, it is certainly one of the most advanced steps in relieving us of laborious work ever made in modern bee-keeping.

Now the question is, in your mind, "Can I afford to buy this outfit?" Well, I will tell you what it is doing for us, then you can answer that question yourself. One year ago, with about the same number of colonies, we employed two men during the season, and a third man part of the time. Now we can do the work much better and easier with one man. You can figure out the amount here saved. During the extracting season we usually extract our combs six times, and we now find that such sets of combs, when taken from the extractor, are about 2 lbs. lighter than they have ever been before. Here we gain at least 10 lbs. per colony during the season. I leave this also for you to figure out—the many dollars' worth of honey saved on nearly 700 colonies.

Now, my friends, I think if you are running 100 colonies, or even less, for extracted honey, you can not afford to be without this outfit. The total expense to run the engine is less than 1½ cents per hour; and it is a willing laborer, always ready, and never tired. It can be used at any season to furnish power for running the cream-separator, churning, sawing wood, grinding bones for poultry, or any other work requiring one horse power. The directions sent with it are so plain that anybody can use it. Two men can carry it to any convenient place to work, and in a few minutes it can be leveled and ready to commence.

As I now recall to memory my first extractor, of some 37 years ago, which was a Peabody machine, the can as well as the combs revolved, and they had to be removed from the extractor and reversed by hand, the honey running out through the bottom into a small-sized milk-pan; and the waste and muss were dreadful. I can hardly realize the great improvements that have been made in honey-extractors.

Some time ago I called your attention to the importance of producing honey with comparatively small expense; but then the work was all done by hand. Now, when the most laborious part can be done with gasoline power, it reduces the cost of production to a still lower figure.

Why, I would as soon think of mowing a large farm with the old scythe as now to attempt to do our extracting with that poor right arm. No, that day is past and it will never return. We are surrounded with an element of progress, and every thing connected with the life of man is improving. The greatest achievements of the past are but milestones marking his progress to the sublime structures of to-day. There! I wish I could keep my mind on my subject.

Some may think that it is of little importance if one and a half or two pounds of honey is left in a set of extracting-combs, with a few colonies that are extracted only once or twice during the summer. I admit it is but little; but in our apiary it amounts to more than three tons in a season. This is saving enough

in one summer to pay for several of these new outfits. You may think, "Well, if I don't get it all this time what is the difference? I shall get it the next time around." Yes, but you don't get it, and you never will get it. Under the excitement caused by disturbing them it is mostly eaten by the bees, and you are just that amount out; so I advise you to save every particle you can, every time you extract. It will all help to fill the barrels in the fall.

BEE-SMOKERS.

Still another much improved implement is a bee-smoker. Since father Quinby invented the bellows bee-smoker and gave it to the bee-keeping world we have had many different kinds of smokers on the market—some very good ones; but the latest and most practical of them all is an aluminum-coated smoker. It is light to handle, and the draft is all that can be desired. There certainly will be a large demand for them in the future.

LARGER DRIVING PULLEY NEEDED ON THE ENGINE.

In justice to the purchaser of these extracting outfits, as well as the manufacturer, I must speak of two defects in the engine as they are now sent out. The fan for cooling the cylinder should always be sent with the machine. It is very necessary to have when in use. The other is, the driving-pulley should be of three-inch diameter instead of 2½. This is necessary to acquire sufficient speed to run the comb-baskets of the extractor so as to throw out thoroughly all the honey.

In regard to the extractor, I can not see how it could be improved. It is the best-made, most practical extractor I have ever seen. Its reversing arrangement is perfect, and you need not be afraid to put the most frail combs you ever have in its baskets, then start the machine so the combs will travel nearly 50 miles an hour, which is about the right speed to throw out all the honey; then slow a little, but do not stop, and the baskets will reverse themselves, when you can again let it hum, and the combs, when taken out, are as nearly perfect as when put into the extractor.

In the above I have briefly stated the merits and demerits of this recent acquisition to our extracting-implements; and, my friend, it now rests with you to take your place in the ranks of extracted-honey producers, either well in the front with modern methods and these useful implements, or in the rear with all the hard labor and discouraging features of the past.

If you choose the latter, I am afraid that the inexorable law of competition will sooner or later drive you to the wall. It will be only a short time before thousands of these new outfits will be in use, and no man can use his muscles to compete successfully with this convenient inexpensive motive power.

Delanson, N. Y.

[It is possible that a larger driving-pulley on the engine-shaft might be an advantage; but in our work with the engine we had

thought that, if the belt could be kept from slipping, the $2\frac{1}{2}$ -inch pulley would give the proper speed. But if the combs will not break, a higher speed would be desirable, and the three-inch driving-pulley would have the advantage.

Gasoline-engines run most economically when they are hot, and the high temperature is a decided advantage; therefore, unless the cylinder should become so overheated as to cause self-firing or burning of the lubricating oil, it is our opinion that the fan is not needed except when the engine is working continuously at the limit of its power.—ED.]

QUEEN-EXCLUDING HONEY-BOARDS.

Do they Obstruct the Passage of Worker Bees? Sizes of Perforations; Upper Entrances; No Excluders Needed in the Production of Comb Honey.

BY S. E. MILLER.

The article by G. C. Greiner, p. 107, Jan. 15, last, and your editorial comment and call for reports, inspires me to express myself on queen-excluding honey-boards.

This article deals mainly with the size of perforations; and while I wish to discuss queen-excluders in a general way I will first reply to the query in the latter part of the editorial comment as to whether the perforations as now made are too small.

I wish to go on record as saying they are not. I want a queen-excluder to exclude queens.

Mr. Greiner admits that he used the old-style excluders (those with the larger openings) on the more advanced and stronger colonies, and those with the smaller openings on colonies that did not require surplus room until later. He does not express it in these words, but it amounts to the same. Is it any wonder that the colonies having the old-style excluders outstripped the others?

Again he asks, "Why do queens so seldom start brood in our section-cases, although a case well supplied with bait-combs offers a tempting inducement?" Mr. Greiner, it seems to me, could easily have answered this question himself, for he certainly knows that queens will not of choice select a comb as small as a one-pound section to deposit eggs in.

A little further on he asks: "Is it such a terrible affair that, to prevent it, we have to compel our bees to crowd themselves through these sharp-edged strainers?" This was in reference to finding brood in the extracting-combs. To find combs which we supposed were full of honey, and honey only, containing large patches of brood, is not exactly terrible, but it is a nuisance, and quite a lot of bother and time lost in putting the queen back where she belongs, and adjusting things to prevent her from again entering the surplus-chamber, for my experience does not exactly agree with Mr. Greiner's, where he says, in reference to allowing her to run in at the entrance, "In all probability she will

remain there." With me, in all probability she will be back up in the surplus-chamber in less than 24 hours unless I find the opening she has passed up through and close it.

In my opinion the great effort required on the part of a worker to pass through perforated metal, as told by Mr. Greiner and others, is very much overdrawn.

The thing is very easily tested, thus: Place a drone-guard over the entrance of any populous colony when they are working strong. When first placed there it will cause considerable confusion, and apparently some effort on the part of the bees to pass through; but if you will take notice a few hours or half a day later you will see that they have acquired the knack, and pass through with little or no trouble. It's easy when they know how.

I will here mention one objection to a drone-guard or trap; and that is, that much of the pollen is scraped off the bees' pollen-baskets in passing through the metal. I have seen times when I believe I could have gathered up a teaspoonful of pollen from the alighting-board of a single hive. This can not be considered a serious objection, however, for it is only at certain times and on certain colonies that we need use drone-guards or drone and queen traps; and when it comes to queen-excluding honey-boards this raking-off of the pollen may be considered an advantage rather than the contrary, for we do not wish to have pollen stored with the surplus honey.

A queen-excluder should be what its name implies; and when we intend to confine a queen to any certain part of the hive by means of an excluder there should be no doubt about her remaining there.

Producing extracted honey without queen-excluding honey-boards is practiced by many expert bee-keepers, and I should like to have one of them come to my locality and show me how it is done. With me the queens will insist on occupying the upper story, frequently deserting the combs below entirely. If two stories only are used she will take to the upper, or second one. If the third is put on she will then enter it; and if honey is not coming in sufficiently to keep the hive full, the lower set of combs will be found clean and dry, for the workers seem to enter into the spirit of the thing and conspire to abandon the lower combs.

This is not in exceptional cases, but is the rule with my bees. Is it the bees, the locality, or the keeper that is to blame for this state of affairs? If some one who knows how can tell me how to overcome this difficulty I may try to dispense with queen-excluders in the production of extracted honey; but so long as I know no better I must keep on using excluders, and believe that the great majority will do well to do likewise. To extract honey from combs containing unsealed brood is an abomination.

While I would not attempt to produce extracted honey without queen-excluding honey-boards, I am at a loss to know why many learned bee-keepers still use honey-boards of the queen-excluding type in the produc-

tion of comb honey. Probably their bees are trained differently, or the locality has something to do with it. I have practically no use for a honey-board between a comb-honey super and the brood-nest. The cases of the queen entering the sections are so rare that it is not worth considering.

If queen-excluders are so much in the way, why not make an entrance above them? In fact, I have several hive-bodies with holes of $\frac{1}{4}$ or $\frac{3}{8}$ inch. These are frequently used as supers for extracting-combs, and the bees seem to use these holes very little, appearing to prefer to pass down through the honey-board and out at the regular entrance. It seems to me that, if the bees have such an aversion to honey-boards, they would use such upper entrance almost entirely in preference to crowding, squeezing, and struggling (as some would express it) through the perforations in the honey-board.

Bluffton, Mo.

[There will soon be on the market a queen-excluder that will overcome entirely the objections that have been urged against the ordinary perforated metal with its more or less rough edges, that thus far do not seem to be entirely avoidable. The new product we shall illustrate shortly in these columns. Experts who have examined it pronounce it perfect.—ED.]

HONEY-PLANTS NEAR DR. MILLER'S HOME.

Plenty of Goldenrod, but no Goldenrod Honey.

BY DR. C. C. MILLER.

The region round about Marengo is not noted as one abounding in a variety of profitable honey-plants. So true is this that bee-keepers have said to me, "Why don't you pull up stakes and settle in some good honey locality?" Well, I'm here; and after one has settled in any locality the ties that bind him to that locality are likely to become stronger as the years go by. When I settled here, more than fifty years ago, it was not as a bee-keeper, but as a physician; and I never dreamed of having any thing to do with bees until I had been here five years, and not till years after that did the thought of making a business of bee-keeping enter my head. If I had known in the first place what I now know, very likely I should have trekked to some better locality, even after fifteen or twenty years of peaceful residence here.

For some time after becoming a bee-keeper I didn't care whether it was a good locality or not; and after I did care it was some time before I knew enough to know how poor a locality it was. Possibly I'm not gifted in that way. I suspect that G. M. Doolittle would nose around here for half a day and tell me much about my locality that I never knew before.

There's goldenrod. Some bee-keepers upon seeing it here just before breaking into

bloom would say, "Why, with all that mass of goldenrod you ought to have your hives filled for winter, and at least a little surplus, even if you have no other honey-plants," for it's well scattered, and wherever it has a chance it thrives. Just in front of the home apiary, where for four or five years the ground has not been cultivated on account of the bees being there, goldenrod has taken possession. I wish you could see it. Last summer it was a mass of goldenrod, and the center was solid yellow, making a beautiful sight.

But goldenrod is of no value here except for its beauty. On Sept. 7 more bees were on it than usual, but generally only flies and beetles frequent it. Why it should be valueless here and valuable in some localities, I don't know.



FIG. 1.—A LARGE BASSWOOD-TREE NEAR MARENGO, ILL.

Then there's basswood, one of the very best honey-plants that grow—generally reliable as to yielding, and yielding enormously when it does yield. Fig. 1, a beautiful specimen which grows right in front of our house, shows how well suited to it are the soil and climate here; and when the bees are busy on its blossoms the sound is charming. But the woods are not full of such trees. Probably there isn't a spot in the county where they're as thick as on my place, and they were mostly planted; and you can't get a plantation of basswoods into full bearing in a day. This tree was planted 25 or 30 years ago, and it's only 16 inches in diameter

a foot above the ground now. Only two or three times in 45 years have I detected the taste or odor of basswood honey as gathered by my bees.

Fig. 2 shows another tree, horse chestnut, that ought to be a great yielder, judging by the sound of the bees among its blossoms when the tree is in full bloom. But there are two reasons why I don't get surplus from horse chestnuts. One is that there are no trees to speak of, and another is that all the bees that work on it are bumble-bees. Perhaps that last is reason enough. I may as well fess up that I wanted an excuse to show you the pretty picture. That tree makes a delightful place of the piazza, and sometimes on a hot day I enjoy sitting at work at my typewriter under its shelter.

To offset these sources upon which I can not depend is the one plant, white clover. Wipe out white clover and I'd have to quit.

But the sad part of it is that, while some years, perhaps most years, white clover yields liberally there are years like 1906 when it blooms bountifully with never a yield. There is, however, a saving on sections, for the stock that was ready for the crop I didn't get in 1906 will be all right for a crop another year.

If I were a young man looking for a honey location I'd take my time to learning about it, but not enough time to fall too much in love with the place and the people until I knew for certain the honey was there.

Marengo, Ill.

THE WIDE FRAME—WHAT IS IT?

How to Make it; the Construction of the Super.

BY F. GREINER.

It would seem almost needless to write an article on wide frames and wide-frame supers; but several inquiries have come to me of late, one from across the water, and I have been asked to describe the wide-frame super in GLEANINGS if I could not answer by private letter, so I have gathered the courage to ask the editor to allow me the space to do justice to the inquirers, although I

well know that the wide-frame super is the oldest good practical super in existence, and every bee-keeper ought to know what it is.

It would be difficult to tell just who invented the wide frame. Mr. Doolittle, who uses it exclusively, I think, told me that Mr. J. S. Harbison first introduced it. Mr. A. I. Root brought out the double-tier wide frame adapted to the regular Langstroth or Simplicity hive. I am too modest to mention some other inventors who constructed single-tier wide-frame supers that have not been improved since in principle, except, perhaps, making use of a fence or screen separator instead of the plain wood separator and adding the double bee-space, so that the first comb will not face the side of the hive directly. I will mention this latter feature again to make it clear. When saying that the wide-frame super is the oldest *good practical* super I concede that there are oth-



FIG. 2.—DR. MILLER'S HOME, WITH A HORSE-CHESTNUT TREE NEAR THE PIAZZA.

er good supers in use such as the Ideal super, T super, slotted-section super, etc.; but I think the wide-frame super is the oldest, and a little the best for me, which, however, does not preclude the fact that I am biased in this matter. It is not my object to argue the question as to which is the best super, but to describe what the wide-frame super is and what it looks like.

The width of the frames which are to hold the honey-boxes, commonly called sections, depends, of course, upon the width of the sections used. Suppose we use the $4\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{1}{2}$ regular section, then the end-pieces must be $1\frac{1}{2}$ inches wide, and a hair's breadth longer than the section is tall. It is most important that this be not overlooked, otherwise the sections will not go in easily; and, worst of all, when crowded in they will spring the bottom-bar down. If these end-pieces are made $\frac{1}{2}$ -inch thick there is a good opportunity furnished for nailing the frame

so it can not easily give out. I have many wide frames with end-pieces $\frac{3}{8}$ -inch thick. They have been in use many years, and are good now. I suppose that the top and bottom of a $1\frac{1}{4}$ section is $1\frac{3}{8}$ inches wide. It would be better if it were $1\frac{1}{2}$ inches. I can see no disadvantage in this, and we would have a

wider and therefore stronger bottom-bar, for this as well as the top-bar of the frame will have to be the same width as the top and bottom of the sections. Perhaps $\frac{5}{8}$ inch would be best for thickness, both of top and bottom bar, or possibly $\frac{3}{4}$ inch might do. I have but little trouble with bottom-bars of $\frac{1}{2}$ inch sagging, but $\frac{5}{8}$ would be safer. There is a little kink about nailing these frames, worth knowing. In the first place we need a little machine for holding the end-pieces of the frame in just the right position, and so arranged that the top-bar will fit in its proper place, projecting alike at both ends. This top-bar should be perfectly straight, and securely nailed to the end-bars with three cement-coated wire nails $1\frac{1}{2}$ inches long, 14 wire. If the end-pieces are as thick as stated, and of medium-hard wood (I utilize chestnut, whitewood, or sometimes the red (heart) of basswood, if it seems

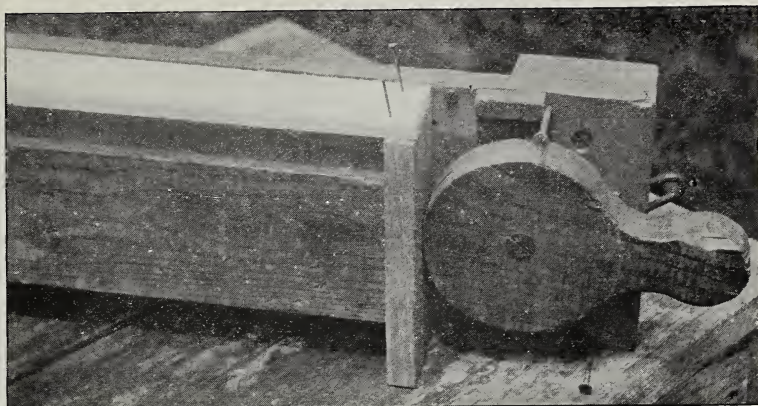


FIG. 1.—F. GREINER'S RACK FOR NAILING WIDE FRAMES.

hard), the three nails at each end will hold the top-bar very securely.

The bottom-bar need not be nailed as strongly. Two $1\frac{1}{4}$ nails, 16 wire, will hold it in such timber as mentioned. It should curve slightly upward, and here is where that kink comes in. Fig. 1 shows where and how the nails should be driven. If they just hit the inside edge of the end-piece, and are set slanting as shown, then driven home so the head is sunken into the wood, the bottom-bar will spring in or have the upward curve needed. The top-bar may be manipulated in the same fashion—that is, should it have an upward curve. By proper nailing it may be drawn down so it will become straight or even curve downward. This needs some experience, but is not difficult to learn. We ought to take a good deal of pains in nailing these frames, for it is expected that they will last a lifetime at least.

As I make my wide frames, the last thing done is nailing on the separator, a plain thin board a scant $\frac{3}{8}$ inch narrower than the section is tall. It can be properly spaced by eye, and six smooth wire nails $\frac{3}{4}$ inch long hold it well. The shell which is to hold the frames is just like a shallow hive; in fact, by substituting, regular shallow frames may be used for a brood-chamber or extracting-super.

If the super is roomy enough it will be well to provide a double bee-space at one side of it as can be seen in Fig. 2, showing hive, super, and wide frame as

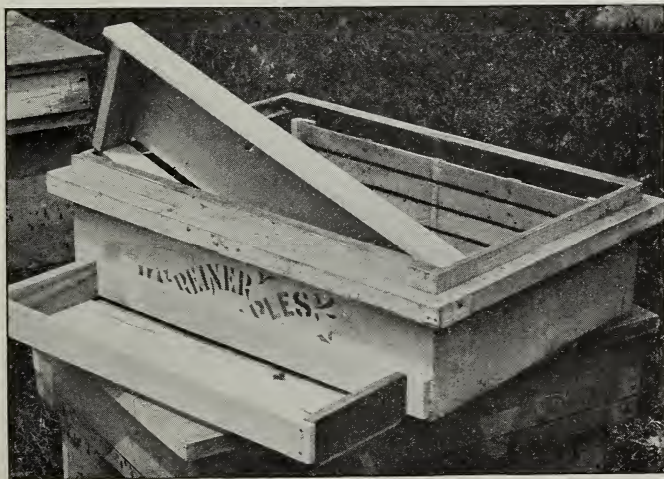


FIG. 2.—GREINER'S SUPER PROVIDED WITH WIDE FRAMES.



J. H. MILLER'S APIARY NEAR LOS ANGELES, CALIFORNIA.

used in my yards. When the wide frames are filled with boxes they are placed in the super, commencing on the side where the double bee-space is provided and then wedged up. I never learned the knack of using the little springs to hold the frames and sections snugly together. Wedges do not entirely satisfy me, although they are cheap, and easily applied and removed. I believe tightening-screws would be better. These ought to go through the side wall of the super opposite the side with the double bee-space. It would require three for each super. I should be glad if they could be procured.

The wide frame protects the honey-boxes most perfectly on all sides against being smeared with propolis by the bees, but is at the same time the most expensive method.

Naples, N. Y.

BEE-KEEPING IN CALIFORNIA.

A Successful Apiary just Outside of Los Angeles.

BY B. S. K. BENNETT.

Were you ever at work in your apiary and wished to be in the city? Have you desired to see the busy streets and life of a large city, and still be among a hundred cities of your own? Most California apiaries are noted for their isolation, situated mostly in the wild-brush hills for best honey production; and, to say the least, it is so lonely that a sight of the city would be a real pleasure.

Mr. J. H. Miller, a furniture-polisher, was fortunate in locating his apiary on a hillside

a few miles north of Los Angeles, at such an altitude that one can readily see the fine buildings and the results of activity of a busy and growing city, and still have his apiary among the best of honey-yielding flora.

Mr. Miller, having business to attend to in the city, desired a near location, and holds the honor of the nearest producing apiary here. He started with some 30 colonies and increased to 100, all in Dovetailed 8 and 10 Hoffman-frame hives, laid out in terraces or steps on the hillside, and produced both extracted and comb honey of excellent quality.

His honey-house, as shown, is 14x14, constructed of framework covered with burlap. The floor forms a platform even with the first terrace, and thus makes a cellar for his honey-tanks below.

Mr. Miller has since branched out—has sold this location, and now has an apiary more distant from Los Angeles, where he keeps 300 or more colonies, and devotes his whole time to the business.

Los Angeles, Cal.

BEEES BURIED IN PITS.

Why no Extra Ventilation is Necessary in a Sandy Soil.

In an article entitled "Helpful Hints in Extensive Bee-keeping" in *Bee-keepers' Review* for March, Mr. E. D. Townsend says, "The pits have no ventilation; and when the bees are removed, the hives and combs are quite damp and moldy." I have seen other accounts of the same condition of the bees, and, I think, the same lack of ventilation. Will you please explain why it is that so

many, in building bee-cellars, insist that they be dry and well ventilated. An answer in GLEANINGS would be very much appreciated.

E. MEAKER.

Auburn, N. Y.

[As the above question was addressed to Dr. Miller, his reply follows.—Ed.]

It does look a little contradictory to have ventilated dryness on one hand and unventilated dampness on the other, and yet each considered all right for wintering bees. No wonder you want the two things reconciled.

I don't believe bees can live without air. The importance of fresh air for the human family—and abundance of fresh air at that—is only beginning to be understood properly, and it is doubtful if many bee-keepers correctly estimate the importance of pure air for their bees.

On the other hand, the ill effect of dampness, *per se*, upon bees in winter is probably overestimated. More than one bee-cellar has water running through it, the effect being helpful rather than harmful. It is quite true that, when a cellar is damp and moldy, the bees do not winter well in it—not *because* the cellar is damp, but because the air is poor, and the dampness shows that the cellar is not well ventilated.

At a certain temperature, somewhere in the neighborhood of 45 degrees, bees are very nearly dormant; and at that temperature they require only a small amount of air. That amount of air will work through the walls of a bee-pit in any reasonably porous soil. The pit keeps the temperature quite even, and, if arranged to keep near 45, the small amount of air will suffice. When Mr. Townsend says there is "no ventilation" he probably does not mean that, strictly speaking, there is no change of air, but that he has made no special provision for ventilation. There may be such a thing as a pit with no ventilation, as where the soil is a stiff, impervious clay; but, if I am rightly informed, bees sealed up in such a pit will die.

The special advantage of a pit is that it keeps at an *even* temperature, bees wintering in spite of the dampness, because kept constantly at the point where the least ventilation is needed. Set such a pit against a cellar that by any means is kept just as even in temperature (hard thing to have such a cellar), and at the same time well ventilated, and I'd choose the cellar. Guess I'd take the cellar anyhow, even if not quite so even.

C. C. MILLER.

[If we are correct, successful wintering in clamps or pits is possible only in sandy soils that are porous in their nature, letting water drain away and more or less of air to percolate through them. If there is any case where successful pit wintering has been secured in a heavy clay soil we should like to hear of it. This may explain why some can get along with no ventilation and others not.]

A uniform temperature of 45 degrees induces a quiescent sleep bordering on a semi-hibernation where very little air is consumed and very little food as well. If the temperature can be maintained at this point not much air will be required; but where the thermometer varies considerably, then a great deal of ventilation is needed.—Ed.]

BEE-KEEPING IN FLORIDA.

A Visit at the Home of O. O. Poppleton.

BY FRED W. MUTH.

The picture of Mr. O. O. Poppleton among his bees gives one an idea of his migratory apiaries, and at the same time portrays an excellent likeness of our old friend when working with his little pets the honey-bees.

When the honey-flow at his home yards proves a failure, or even if it does not come up to his expectation or his liking, he invariably shifts his apiary either up or down the Indian River, often for a distance of 100 miles, until he reaches a spot in that beautiful country that he considers suitable for him and his bees. For this part of the work



O. O. POPPLETON AMONG HIS BEES, AT STUART, FLORIDA.

he is well equipped, having a large launch that will hold some 60 hives of bees, as well as a barge that will tow an entire apiary at a time. Mr. Poppleton is an efficient pilot. I shall never forget the trip I made with him on his launch *Thelma*, from Fort Pierce to his home at Stuart, Fla. We called upon

our friend Harry E. Hill, of Fort Pierce, who generously invited us to stroll with him through his pineapple plantation; and after I had been more than satisfied with some of the finest of that fruit, Harry loaded us down with the fruit, which was laid in the stern of the boat. Those pineapples afforded the finest refreshment on our trip; and I will say here that the pineapples we buy in this section of the country, that have been shipped from the South, can not begin to compare with that delicious fruit as it is taken from the plant when ripe.

We prize that picture of our friend Poppleton very highly, for it is so natural to see him among his bees, just as one might find at Cincinnati, O.

HIVE-MAKING.

A Beginner's Experience in Getting Bees Out of Trees; a New Bee-veil.

BY E. C. BRITTON.

The photograph shows some hives which I made last week. The one in the foreground is made of straw. It has a bottom-board 20 inches square, a wood frame inside of the hive, with a hole in top and a stand to place over the hive, so as to put a bee-space board

would not advise any one to do it unless he has plenty of time and would be contented with a poorer hive. The parts can not be made as accurately as those in the machine-made ones, and the frames will not hang alike—some nearer than others, and so on.

The tall hive in the background is an old box hive, which I found at "the old home." It was there when I was a boy. I found two of them there, and both would have had bees in them if it had not been for the wax-moths.

I captured my first swarm on a neighbor's apple-tree last June, and have taken two from houses and two from the inside of other trees, making five in all. I have divided some, so you see I have been making quite an increase in the last six months—for a beginner.

The last colony, in an old apple-tree, had 30,000 bees and 70 pounds of honey. It was a lovely day, and we began work on them about 11 A.M., after paying \$1.25 for them to the man who owned the land. They were Italian bees, and great workers. The entrance was about a foot from the ground, and I took an ax and cut a hole about three feet high and six or eight inches wide. It was a great sight. The tree was hollow, and the comb was about 2½ feet high, and over a foot wide.

After taking out two combs and wiring them in the frames I put an old bag over the

top of the comb inside of the tree, so the queen would not escape, for I lost the queen in the other tree because she went away up through a hollow where I could not find her. After putting all the comb in the frames (and we had a painful of pieces besides) I pulled out the bag, and the queen dropped down on the ground. I took her and put her on the hive, and she crawled down between the frames out of sight among the bees. We used a smoker all the time, and what bees didn't get on the comb we put into the hive



HOME-MADE DOVETAILED HIVES AND STRAW SKEP.

on top for the super. I made it all, just for the pleasure of having an old-fashioned straw hive. I will put it in a small house with open front and the back on hinges, so as to let down in summer. I bought ten Dovetailed hives in the flat. I made one myself, but

by the handful. The last bee—the queen—in the hive, I put on the cover and placed all in my automobile, and was at home by 6 P.M.

I want to tell about my bee-veil. I took an old straw hat, sewed a strip about four inches wide, of mosquito wire netting, around

it, then cotton netting below that, to tuck under my coat. The advantage of the wire netting is, the wind will not blow it against your face or ears. I then took a piece of plain glass, $2\frac{1}{2} \times 5$, put a strip of wire netting around it for a border, and cut a hole, just large enough in front of the netting on the hat to allow me to sew the glass into it. Just slip on the hat, any time you wish to go among the bees, and you will see better through glass and not have to look through the netting all the time, which is bad for the eyes.

Canton, Mass.

[But don't you have trouble with the glass getting coated with vapor from the breath? That has been our experience, and others have reported the same trouble.—Ed.]

A LARGE EARLY SWARM.

A Veil with a Rubber Cord to Draw up Around the Collar.

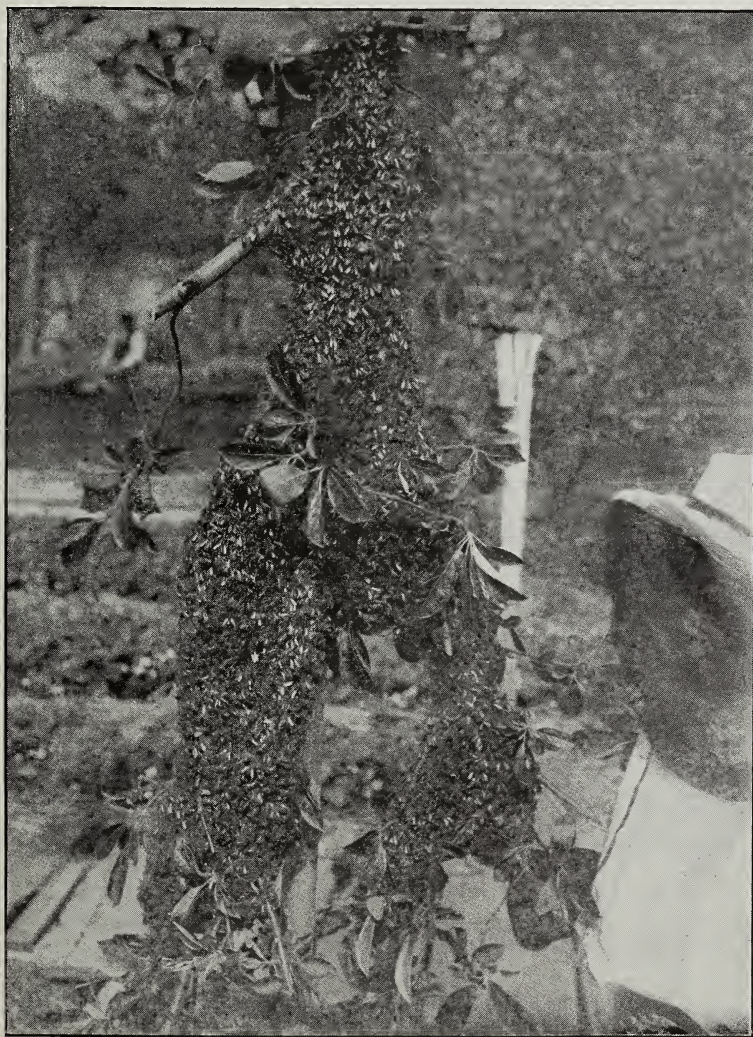
BY M. L. BREWER.

The engraving shows my first swarm, May 17, with my five-year-old helper, Master Harold Hazen, of Jonesville, Mich., holding them steady, as it was blowing, and they were suspended from the clothesline for the picture after they were brought down from the tree where they clustered.

In the May 15th issue, page 705, Dr. Miller describes his veil, the invention of his sister-in-law. We have used one of that style for

years, but with an improvement which we think the good doctor will find to his advantage as well as convenience, doing away with safety-pins. If he will notice, the veil our helper wears is after his pattern, but with a rubber cord at the bottom that draws snug around the collar, which is easily spread with the hands to put over the head. When fitted around the collar, no difference which direction the bees come from, they do not enter.

Philo, Ill.



M. L. BREWER'S FIRST SWARM, IN CHARGE OF HIS 5-YEAR-OLD HELPER.

[It would seem as if the tight band around the neck would be less comfortable than Dr. Miller's arrangement, but we may be mistaken.—Ed.]

ALFILARELA, OR PIN CLOVER.

Erodium Cicutarium.

BY W. K. MORRISON.

This very useful bee-plant has received comparatively little notice thus far, though it is one of the most valuable forage-plants in the United States, covering a wide extent of country, including all of Arizona, California, Nevada, Utah, New Mexico, Oregon, and parts of Washington, Idaho, and Texas. It deserves more notice than it has hitherto received. Though classed as a weed by some, it is greedily eaten by stock, and compares favorably with red clover in nutritive value. It is not cultivated at all anywhere, therefore we do not know what it would do under intensive culture. The seeds stick to the fleeces of the sheep, and by this means have been carried far and wide over the West. No one seems to have tried it in the South; but as it grows well in Central America and Mexico it might be expected to do well in Florida. The Spanish introduced it accidentally into Mexico from old Spain, and the Mission Fathers of California proba-

yields considerable honey, but it is more valuable still for the pollen it yields.

Despite its names it is not a clover at all, but has been assigned by botanists a place with the common geranium. In California and Arizona the inhabitants regard it as a native plant, and naturally so, as it is as much at home there as on the shores of the Mediterranean Sea.

A SEASON'S WORK WITH SECTIONAL HIVES.

Swarm Control and Comb-honey Production;
Cellar Wintering of Bees.

BY J. E. HAND.

Having our strongest colonies snugly tucked in their winter nest we will next turn our attention to the lighter colonies that were chosen for cellar wintering. Experience has taught us that it is not safe to attempt to winter a colony of bees out of doors that is light either in bees or stores; however, such colonies will winter as well in a dry warm cellar as will a stronger colony. We will first place under each colony to be wintered in the cellar

an empty super 5 inches deep, with a tight bottom, and the sides well ventilated with wire screen. This furnishes an air-chamber for ventilation, and at the same time prevents the bees from flying out of the hives and perishing on the cellar bottom, and does away with the nuisance of having the bees fly out of the



MAKING HAY FROM ALFILARELA.

bly brought it with them sticking to the hides of their cattle or in the wool of their sheep.

Alfilaria is particularly interesting at this time now that the Secretary of Agriculture has undertaken to improve some of the Western ranges which have been over-cropped, for the cattle-raisers have a high opinion of it as a forage for all kinds of stock.

The Arizona Experiment Station has issued a very good account of this plant in the shape of a special bulletin (No. 52) from which we derive our illustrations and some of our facts as regards its history.

The bee-keepers of the West would be glad to see Secretary Wilson do something to help this plant to survive on the ranges, and possibly its area might be extended. It

hives at the least jar, as they have a habit of doing while carrying them in and out of the cellar. It is also a safeguard against the depredations of mice, which often annoy the bees in the cellar, causing many to leave the hives only to become lost and perish on the cellar bottom.

The advantages gained by this method of confining the bees to the hives while wintering in the cellar are many, and no one should take the risk of allowing his bees to leave the hives while confined in the cellar during winter. Bees that are kept so long in confinement have a strong desire for flight in order to enable them to discharge their feces, and will leave the hives in great numbers. Colonies are often greatly weakened from this cause, and the bee-keeper can ill afford to lose bees at this season of the year.

Having a ventilated air-chamber under each hive we will next proceed to carry them into the cellar and tier them up one above the other as high as we can reach comfortably. This job is quickly done, and, with a perfectly dry cellar, with a temperature ranging between 40 and 45°, with plenty of ventilation, we have every reason to expect every colony to come out in the spring in a perfectly healthy condition, especially since their winter stores are composed largely of sugar syrup, as bees endure long confinement much better when wintered on stores of sugar syrup than with stores of honey. However, bees that are wintered in the cellar should have at least one flight during February if the weather is suitable. With our bees all in their winter quarters our season's work with them is ended, and it is with a certain degree of satisfaction that we look backward over the past season's work in the apiary, knowing that we have done the very best we could; and in closing our series of articles on the subject of comb-honey production and swarm control we will say that, while we perhaps derive more real pleasure from the pursuit of bee-keeping than from any other branch of rural industry, yet we have to confess that profit has been the actuating principle with us; and how to obtain the greatest possible amount of profit with the least possible expense has been our study for years. Our motto has been, not how can we get the largest individual yield per colony from

a few colonies of bees by expending a great amount of labor, but at how little expense for labor and capital can we exhaust the honey resources of our location? This is the paramount issue that should appeal to the judgment of every honey-producer of to-day. At the present time labor cuts a greater fig-

ure in the cost of honey-production than capital, therefore every labor-saving method reduces the cost of honey-production and merits the careful consideration of every producer of honey.

Our improved methods of hive manipulation not only reduce the cost of honey-production fully a half, but they enable the apiarist to keep twice as many bees with the



ALFILARELA IN ARIZONA.

same amount of labor expended, thus doubling his income from his bees.

Regarding the hive-lifting device, too much can not be said in favor of this labor-saving invention, as it does away with the disagreeable backaching work of lifting hives, and hives can be handled more rapidly than by

hand. To give the reader something of an idea of the ease and rapidity with which hives can be handled by this device we will take a pile of five sections of our hive, weighing 125 lbs., and with our machine we will separate each section in the pile and place a honey-board between each two sections in less than thirty seconds.

We would especially call your attention to our rapid system of perfectly filling the sections with foundation, which holds the foundation always in the center of the sections regardless of whether the hive is level or not. When we say "perfectly filled" we mean that the sections are so nearly filled with foundation that no bee can ever get hold of the edge to gnaw it out and cause popholes in the corners of the section of honey; and the foundation will not buckle, even though the sections are out of true. By this method one man can do the work of four with any hot-plate machine, and it insures a section of honey firmly fastened on four sides; and last, but not least, supers filled with foundation by this method may be safely shipped by freight or hauled to out-apiaries, for the foundation can not be jarred out by rough handling. We have a good hot-plate foundation-fastener which we will give to any one who will ask for it.

Our system of finishing all our sections over a feeder insures a uniform filling of them, and eliminates the nuisance of lightweight sections that are capped at the close of a short honey-flow and before they are perfectly filled out. We could not produce fancy comb honey in our location by the usual methods in vogue.

Again, our method of using two queens in a hive up to the time of putting on the sections, together with a super of extracting-combs above the brood-chamber forces the bees to store all the honey that may be gathered previous to the main honey-flow in the extracting-combs, since the fertility of the queen is in excess of the room in the brood-chambers. Taking advantage of the instincts of the bees to store all their honey above the brood, we place these extracting-supers, full of honey, below the brood-chamber after the bees have begun work in the sections, thus compelling the bees through their instincts to store practically all the honey in the sections. By our system of manipulating the sections of the brood-chambers of our hives, taking from and adding to the same as occasion requires, thus at all times giving the queens plenty of room, and by removing the top brood-section whenever any considerable amount of honey shall be stored therein, and always placing such honey directly under the brood-chamber, where it will be quickly removed and stored in the sections, we are able to keep the brood and bees together, giving us strong colonies that are constantly becoming stronger as the season advances. Compare this with other methods of so-called swarm control.

Imagine an artificial swarm made June 10 to 15, without any hatching brood in the hive for the next three weeks; what kind of

condition would such a colony of bees be in for best work in the sections during basswood bloom. They would be mere nuclei compared with our mammoth colonies; and yet the advocates of this system make the broad claim that they get stronger colonies of bees by this method of artificial swarming than it is possible to get by any other system. In applying our system to out-apiaries the home yard is used to draw out and finish the sections, and the out-apiaries furnish the extracted honey to finish off the sections at the close of the honey-flow.

The object of these articles is to eliminate all the uncertainties pertaining to the pursuit of bee-keeping, and place it on a solid basis as compared with other business ventures.

There is no such word as "luck" as applied to bee-keeping, since every effect has its preceding cause; and the same careful attention to every detail of your business will as surely result in success in honey-production as it will in any other branch of rural industry. It is a mistaken idea that bees can not be wintered with the same degree of certainty that attends the wintering of any other farm stock.

A careful observance of every detail as set forth in these two articles on wintering bees will enable any bee-keeper to winter his bees with the same assurance of success that there is in wintering his poultry or sheep. Every writer is supposed to write from the standpoint of his own location; however, since the manipulations of the sectional hive can be varied to suit the requirements of any and every location where bees are kept, they should be governed by location, time, and duration of the honey-flow. There are, indeed, few locations so poor that comb honey can not be produced at a handsome profit by the methods set forth in this series of articles. "Freely ye have received, freely give," is our motto; and if our methods as described in these articles will prove as helpful to others as they have proven to ourselves, which we doubt not, then we shall indeed feel that our labors have not been in vain.

To my bee-keeping friends and collaborators along the lines of solving the intricate problems of apiculture, I bid you a hearty God-speed and extend unto you one and all, of whatever race or nationality, the right hand of fraternal fellowship and good will, believing that, in a multitude of counselors, there is wisdom.

Birmingham, Ohio.

HOW BEES ARE WINTERED IN A COLLEGE DORMITORY.

BY GEO. W. PHILLIPS.

The wintering of bees was always an interesting problem to me. I was born in the tropics, and lived for 22 years in Jamaica, the country of my birth. There we have no winter, nor any thing corresponding to it; but for twelve months in the year the sunshine of summer beams upon us. We do, however, have a continuous rainy spell, com-

ing somewhere about the month of November, and often whole apiaries will succumb to the unfavorable conditions. This was one of the strong arguments my friends urged against me when I decided to launch out into the bee business. But I knew that something was wrong somewhere, and that if this "something" could be found and remedied, the bees would not die. When the November rains began to fall my bees were in good condition for the experiment. Rather than run any risks I removed some weaker colonies right into our house, and I lost not one colony during that rainy spell. The problem had been solved.

Now, the subject of wintering has always appealed to me in much the same way. As manager of the Root Co.'s apiaries a few years ago I often racked my brain to find some expeditious plan by which bees could be tidied through the months of cold weather. Outdoor wintering is ideal in that the bees have always Nature's provisions of air and sunlight—ideal, because on every warm sunny day they may get the advantage of one of those cleansing flights so necessary to the sanitary conditions of the hive—ideal, because the colonies are not removed from their summer stands, and there is no danger of a mix-up in the spring. But in other respects outdoor wintering is far from being satisfactory. The rigor of the northern winters and the consequent effect upon bees wintered outdoors, the excessive amount of stores required—these and other detrimental effects of the system are too well known to need elaboration.

On the other hand, cellar wintering also has its distinct advantages: Weaker colonies may be pulled through; a smaller amount of stores consumed; the northern icy blasts evaded, etc. But cellar wintering has its severe disadvantages too: The foul dank air; the enforced and prolonged confinement of the bees; the fecal exudations rendering the hives well nigh untenable; the bushels of dead and dying bees strewn about the hives and floor—all these are grave features attendant upon indoor wintering.

Now, is it not logical to seek out a system whereby the best features of the above methods might be brought together? Is it possible to find such a system? And if so, then are we not ready to cope successfully with the winter problem? Such a system I think I have hit upon. May be I have not. Any way, the idea needs perfecting, and amid the stress of my college life I can but give the idea to the bee-keeping fraternity, and trust that others will give it the time and thought necessary for its development.

I live on the fourth floor of a college dormitory, and for two years have kept bees near the desk in my study. One of the colonies is in a Root ten-frame observatory hive (I may mention here that Prof. C. W. Chamberlain, of our physics department, has an outfit exactly like my own, and has been conducting like experiments at his private dwelling. Our results are in precise accord). I need not say that the presence of bees in a

dwelling-room caused universal comment. Indeed, in the interest of the common good the curator demanded that they be removed at once; but by respectfully asserting that I knew a little more about the thorny creatures than did the learned gentleman, and by assuming the responsibility for any damage that might be inflicted upon the student public, I was permitted to retain my pets. No damage has yet been inflicted, although I have had as many as six interested feminine spectators at a time—and destitute alike of smoker and veil.

In such a room, for the second year I have wintered my glass hive of bees. The hive with its entrance contracted is placed on a stand the same height as the window-sill, and the window is then drawn down so as to rest firmly on the alighting-board. This alighting-board is so built that the egress is absolutely outside the room, and no stray bee can enter the apartment. The window is wider than the alighting-board. This leaves a space on either side which must be blocked in order to keep the draft out of the room. My rooms are heated with hot water. This year I had extra radiation put in so that the temperature has frequently been as high as 80°. See, then, the results effected: The body of the hive has been kept perfectly warm and cosy, and thus all the finest results of cellar wintering have been attained, while the entrance of the hive has been in direct communication with the open air, and thus all the benefits of outdoor wintering have been enjoyed. Didn't the bees suffer from the unorthodox heat? No, sir; they enjoyed it—at least, they seemed to, for they were enabled from time to time to leave the cluster and stroll about the outside combs. Did they not become excited and indulge in mid-winter flights? Not a bit. The chilly currents of air blowing across the entrance produced a restraining effect. Anybody can see that the arguments against heat in cellar wintering will not apply here. In the cellar the air is warm and fetid. The excited bees rush out into a flying temperature. Here, while the hive is warm and comfortable, outside is the cold fresh atmosphere of winter. But it is a pleasant sight to see those bees fly when a warm day comes.

Let me say that, after having worked with bees in different countries and under varied conditions, I am fully convinced that some sort of practical house-apiary is a thing entirely feasible. In the tropics I have had my veranda upstairs straining beneath the weight of three-story sixteen-frame colonies. I could work with these colonies when floods of rain were deluging the apiary outdoors. And in this northern region, where bees and beekeepers are continually at the mercy of shifting climatic conditions; where the work of the apiary is constantly being hindered by heat and cold, and wind and rain, would it not facilitate matters to adopt artificial measures—somewhat after the manner of the greenhouse men—for bringing about as nearly as possible the normal state of things?

Denison University, O.

[This article was written late last spring; but as it was then a little out of season we have held it as we have held other articles on wintering.

We saw Mr. Phillips a few days ago, and he reported that this colony, while he was away on his vacation, gathered \$5.00 worth of honey, and that the colony Prof. Chamberlain had in his room gathered 75 lbs. of fine comb honey while his other five colonies, wintered outdoors, barely survived the shock of last winter, and gathered absolutely nothing.

Perhaps thirty years ago A. I. Root tried a similar experiment on a larger scale by putting a stove in a house-apiary; but he now says he did not keep up a *continuous* fire; that the building was not frost-proof. Well, the wintering was not of the best. It is probable that the occasional fire stirred up the bees—possibly started brood-rearing. Mr. Phillips emphasizes the importance of a *regular* heat at somewhere living-room temperature.

A few years ago a bee-keeper in Michigan reported that a colony he had in his house with an entrance to the outside wintered perfectly, and he secured a big yield from that colony. We desire to inquire whether there are others who have tried the experiment described by Mr. Phillips.

By the way, he reports that the consumption of stores was not large, and that the bees seem to be dormant—almost in a state of sleep, except when it warmed up, when they took a flight.—Ed.]

BEE-CELLARS.

Can the Atmosphere be Too Dry? The Relation between the Size of the Entrance and the Condition of the Atmosphere.

BY ALLEN LATHAM.

Nothing else in the last January 1st number of GLEANINGS impressed me so strongly as what Mr. Alexander had to say on p. 27 about a cellar that was too dry for the good of the bees. If some person of less experience and mental capacity than Mr. Alexander had offered that experience we should be inclined to think that some error had crept in somehow. As it is, we assume that Mr. Alexander gave the phenomenon careful and discriminating study, and that he rightly eliminated every thing but dryness as a possible cause for the uneasiness of the bees in that dry cellar.

Indeed, the fact that the bees rushed for water as soon as they had opportunity shows that something was wrong; and this fact, coming as a supplement to the statement that the honey left in the hives was *gummy* lends strong credence to all Mr. Alexander's reasoning. These two facts of observation are the only ones with which we are furnished whereby we can judge the case for ourselves, and decide that the cellar was too dry. And, even with these, something tells me that the cellar was simply too dry for the hives as

they were left, but not too dry for them as they might have been left.

It is surely a revelation to most of us that a cellar, in the natural course of things, can be too dry, though an artificially too dry cellar might be easily possible. But recognizing the possibility of such a thing as a cellar naturally too dry, it now remains to ask ourselves how much the fact is worth. Surely, against this one instance of a cellar too dry, we can easily name many of cellars too wet. Against this one instance of bees wintering poorly in a dry cellar we can place hundreds of cases of poor wintering in a wet cellar; and, therefore, we are forced to conclude that in most cases, and for the majority of us, a dry cellar is the best place for our bees, and is a friend rather than a foe.

My own cellar is extremely dry in winter—so dry that lumber seasons beautifully in it; so dry that vegetables and fruits become desiccated and shriveled beyond use unless protected from the cellar atmosphere. In spring the atmosphere changes so as to become sufficiently humid to keep sections in good condition to fold without wetting. In winter the air is so well ventilated by the draft of the steam-heater, though no window nor door nor ventilator is open, that bees falling to the floor become dry and brittle.

Last fall I placed in this cellar six colonies which I had in single-walled hives, and which I did not care to protect for outside wintering. They were placed some twenty feet away from the heater, in a dark corner, with entrances turned to the wall. When taken out late in March they were in excellent condition—bees healthy and combs clean. Two of these colonies were furnished with an entrance only 3 inches long by $\frac{3}{8}$ inch deep, and not one of them had an entrance nearly as ample as I furnish the colonies left outside.

Now, I feel almost certain that, if the cellar had been damp, those bees would have suffered from dampness in the hive, and been restless from overloaded abdomens long before March. The momentous question is, what would they have suffered if the bottom-boards had been removed and the combs exposed to the free circulation of the cellar atmosphere? Whatever be the possible facts, we can see here the desirability of knowing something definite about the humidity of our cellars and of governing the ventilation of the hive interior accordingly. In the case of a damp cellar we had better leave bottoms off or give ample entrance. In the case of a dry cellar we had better curtail the entrance.

That bees manufacture water in digesting or burning honey is beyond question. That this water is sufficient to enable the bees to dissolve gummy honey, sugar candy, etc., is also beyond question. That if the atmosphere robs the bodies of the bees of this water more rapidly than it is replaced through the burning of honey, bees must suffer, and perhaps starve, I concede. I have myself seen them starve in a dry cellar on sugar candy, leaving the candy as hard and dry as a brick.

Allow me to state the results which I had

with baby nuclei in this same cellar the past winter, since they offer more facts bearing on the matter. The readers of GLEANINGS will recall that, during the past year, an article was published which depicted my method of wintering baby nuclei. Last fall I placed 9 (where the year before I set in 24) of these nuclei in the wintering-case. I did not raise the little hives from their bottom-boards as was done before, and I did not set them out for any mid-winter flights as was done before. Otherwise they were treated as were the 24 from which I set out 21 live ones mostly in perfect condition. Of these nine only two were in even fair condition this present spring, and five were absolutely dead. The little hives were damp and fearfully moldy, though this cellar is so dry. The food was of poor heating quality, and more was consumed than on the preceding winter, nearly every little hive being almost if not entirely devoid of honey or syrup.

A tenth baby nucleus was treated as follows: A burlap sack was laid on the concrete cellar-bottom, and on this was placed a shallow dish with half a pound of chloride of calcium above it on a wire cloth. Over this dish was set a hive-body with a horizontal partition of wire cloth upon which the nucleus rested. Then another dish of chloride was placed on the hive. Over all was laid another sack, and above that a flat board with empty hive-bodies holding the same down. It will thus be seen that this little hive was shut away from the cellar air except as it could find its way through the pores of the wood and the fibers of the cloth. The dry air of the cellar was made still drier by the presence of the dishes of chloride.

Incidentally I might mention that, in the empty hive-body, above this arrangement I placed a somewhat larger nucleus with my best breeding-queen. Cover was placed on this hive-body, shutting in the nucleus with only natural entrance of hive-bottom to furnish air to the bees of nucleus which had entrance $\frac{1}{2}$ by 5. This nucleus was set out for one flight in January, and wintered without the loss of ten bees so far as I know.

I wished to test with the tenth nucleus whether bees need air in winter beyond the small amount necessary to burn or oxidize the honey, aiming to take up excess of moisture with the calcium chloride. The air about this nucleus was so dry that bees were easily powdered to dust, and during the course of the winter the chloride all dissolved, and fully a pint of water was absorbed thereby. In January the chloride was about half dissolved, and the bees very quiet, and apparently in fine shape.

Well, I fully expected to take out those bees in April in perfect condition; but I must state the facts. When I found in March the other nuclei in such awful condition, I had, perforce, to open up the tenth. I found 90 per cent of the bees dead outside the hive. About half a dozen bees in the hive showed signs of life. The queen was sluggishly alive by herself, and her I introduced to another nucleus without a queen. The food left in

the combs was not at all gummy—was rather watery in fact. None of the dead bees had distended abdomens, and the hive was sweet, and entirely free from mold. This tenth nucleus offered a striking contrast to those others, whose hives were rankly filthy to both sight and smell.

Here we have a problem. Did those bees desert their hive for water? Scarcely possible, yet they had evidently become uneasy some time in the winter, and left their hive to perish. Their food showed no need of water. I shall try this winter to discover the cause of the failure. I made no provision for disposal of carbon dioxide; and as this sluggish gas gathered about the lower part of the hive-body, in which part the entrance of the nucleus was, it is quite possible that the bees suffered from that cause—too much nitrogen, too little oxygen to burn the honey, etc.

Two other baby nuclei were wintered perfectly, placed in hive-bodies, no attempt being made to ventilate beyond the cracks under and above the bodies, which were not stopped with burlap as in the case of the tenth.

I realize, as I offer this article, that it settles no question with definiteness, and that the whole matter is yet to be solved. But I would urge the fact that few bee-keepers need worry about their cellars being too dry. I would assert here, as I have elsewhere, that a cellar is wet or dry according as the air in it is wet or dry. A cellar may have running water in it, and still be a very dry cellar. Another cellar may not have a drop of water in it, and yet be a damp cellar. Do not judge a cellar by the condition of the cellar-bottom, but judge it by the action of its atmosphere. A wet-bulb and dry-bulb thermometer may be worth the money of any apiarist who winters his bees in the cellar. In lieu of such thermometer a person can judge a cellar largely by the effect of its atmosphere upon fruit and vegetables. It can be laid down as a safe rule that a cellar in which apples keep crisp, and in which turnips and potatoes hold their weight, is a damp cellar; also that a cellar in which apples shrivel, potatoes and turnips lose weight, is a dry cellar. The rapidity with which the desiccating of the vegetable takes place marks the degree of dryness of the cellar air.

I am not an expert in cellar wintering of bees, having always practiced outside wintering. I have, however, tried a colony or two at various times, and have done more or less experimentation. I think it will be safe to say that a bee-keeper whose cellar is good to keep potatoes in will do well to give his colonies large entrances, or even to remove the hive-bottoms; that, on the other hand, a bee-keeper whose cellar is poor for keeping potatoes openly exposed to the air would do well to allow the bees a small entrance. If the cellar be extremely dry there can be no harm in sprinkling the floor occasionally with a garden-pot. Surely, a dry cellar is more easily controlled with a garden-pot or sprinkler than a wet cellar can be controlled.

The best remedy for a wet cellar is a steam-heater or furnace—not to heat the cellar, but to heat the house above. This heater will draw about fifteen tons of air for every ton of coal burned, and all this air must enter the cellar and finally pass up the chimney. It will enter in spite of closed windows and closed doors, and it will keep the cellar sweet and dry. Note, all who use heaters and furnaces, how quickly the cellar feels damp after the fire is allowed to go out in spring.

Do not follow the fool advice that some one, I don't now remember where it was, offered, of setting an oil-stove in your cellar in the hope of drying it. The drying will be but temporary; and after the stove is put out, the air will be damper and more foul than it was in the first place.

Norwich, Conn.

SELLING HONEY.

The Importance of Retaining the Aroma.

BY R. A. BURNETT.

It is becoming better understood among the consuming classes that unripe honey is not palatable; therefore the chief thing now in selling honey is to get the aroma as well as the appearance. Especially is this true when Wisconsin dealers, or those in any of the States east of the Missouri River, seek to put their honey in competition with that west of them. The trade is beginning to discriminate more and more each season with regard to flavor of honey. If the producer is known to manage the product of the bees so as to get this aroma to the utmost he will stand a better chance of marketing at a little higher price than his neighbors—certainly it will be taken in preference; and when there is an abundance of honey this is quite an advantage. People buy honey because it is more than a sweet—they buy it for the relish; therefore the ripening of honey, and not exposing it to the atmosphere in such a way as to eliminate this delicate aroma, is essential in getting a honey that the market wants. This volatile oil, distilled by the blossoms which secrete the nectar, is, therefore, the chief factor in selling honey produced in the middle States. This fact applies equally to extracted and comb honey.

We are of the opinion that it is more difficult to retain this aroma in the extracted form than in the comb, perhaps because so many bee-keepers remove the honey from the comb before it has gone through the necessary curing process, and then again exposing it to the atmosphere to remove more of the water and thus prevent the honey souring.

It is well to remember that merit in the article for sale is the chief factor. When the salesman finds that he has something that pleases the people he becomes enthusiastic, and this causes those seeking for a similar commodity to be influenced by his statement; and, if the goods warrant, he has little dif-

ficulty in making a second sale to the same party. Honey without the desired flavor has had more to do with its own undoing than any other one thing that it has to contend with. We have had many instances of this in our business by people buying a nice-looking case of comb honey for their own use, and, finding it very different from what they had reason to expect, have either returned the greater portion of it or refrained from buying any more, sometimes for years. Let them get pure extracted honey of a tasteless nature and they will not buy any more. It is an easy matter, as a rule, to sell to people what they want, and there are a great many people who desire honey that has that fine old-fashioned flavor that they used to get, but which now they seldom find in the market.

Chicago, Ill.

[R. A. Burnett & Co. are an old standard commission house that has made a specialty of honey for many years. Producers would do well to follow their suggestion in regard to retaining the aroma of honey.—Ed.]

TARRED PAPER.

Its Value as a Winter Protection; how it Hastens Brood-rearing in Early Spring.

BY H. E. CROWTHER.

Last winter I examined a few colonies that were wrapped in tarred paper, and found that they were considerably in advance of those not so protected. I found in every case sealed brood and some young bees, while in colonies not protected by paper there was scarcely any thing beyond the egg.

I also noticed that comparatively weak colonies were progressing very well with brood—having more, I believe, in proportion to their size than the larger and stronger colonies, which is, if I am correct, an unusual state of affairs, but by no means an unfortunate one; and if the extra warmth afforded always advances them to the extent that it has in this case, a few cents invested in papering them would be well spent.

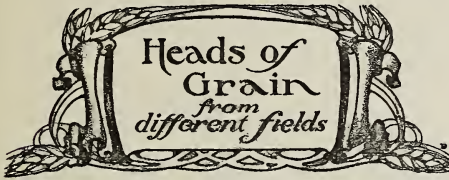
Tarred-paper protection is especially adapted to this climate with so many sunny days. My experience with black paper has been entirely favorable, for in 1905 we prepared the most of our bees for winter by wrapping around the sides long rye straw and covering over the top with black paper, the south end (entrance) being left uncovered by the straw. That was in Northern Ohio, and every colony so prepared came through well. We wintered 64 without the loss of one, and the major part of them were fixed in this way.

It would be interesting to read some reports on this subject, for, without regard to expense, I believe that there is no better way to winter bees in any reasonably mild climate.

Parma, Idaho.

[We believe that a wrapping of roofing tar or heavy manilla paper, around a hive,

forming a tight hood or cap affords excellent protection to a colony of bees, particularly if several folds of newspaper or old sacking be placed under the outside roofing-paper hood. The experience above given is quite in line with that given by several others who have tried these paper hoods. They are so cheap that there is really no excuse for one to let his colonies go unprotected. We shall shortly illustrate several methods for wrapping hives in paper.—Ed.]



THE ALEXANDER PLAN OF BUILDING UP WEAK COLONIES; TWO QUEENS IN A HIVE.

I put two weak colonies over strong ones, on the Alexander plan. One did all right. I then put both queens and all the brood in a ten-frame hive, zinc between. They have the hive so full of brood that I put a hive on top with full sheets of foundation. I know of three other hives in my yard with two queens in—mother and daughter. I went into these hives every day, and saw the cells hatch with the old queen laying.

TOADS KILL BEES.

Now about those toads of Jay's. This valley has more toads than there are in Ohio. Several years ago, when I had my hives on the ground, I missed my bees, and I took a lamp and went out to look. In front of one hive sat two toads, and another one was at the side bumping his head against it. When the bees came to the front to see what the fuss was the two would lick them up. They actually took turns in bumping the hive; and when they would lick up a bee they would wink one eye at me. I got a club and killed 125 that night in front of hives, and 75 the next; then I got boxes and put the hives up high. JOHN L. SHERROD.

Fruita, Colo.

A QUEEN TAKING A PLAYSPELL WITH THE BEES IN THE MONTH OF JANUARY.

Some time after the first of January last, I was watching my bees, and one colony seemed almost in the act of swarming. There was a great confusion, and I soon discovered a golden queen flying in front of the hive enjoying herself fully as well as the workers. So far as I know, that colony has a good queen about 1½ years old. There was no mistake, for I got a good look at her entering the hive. I don't understand this case. Who does? W. T. DAVISON.

Velpen, Indiana.

[This was a freak performance if she was a laying queen; but are you sure about this?

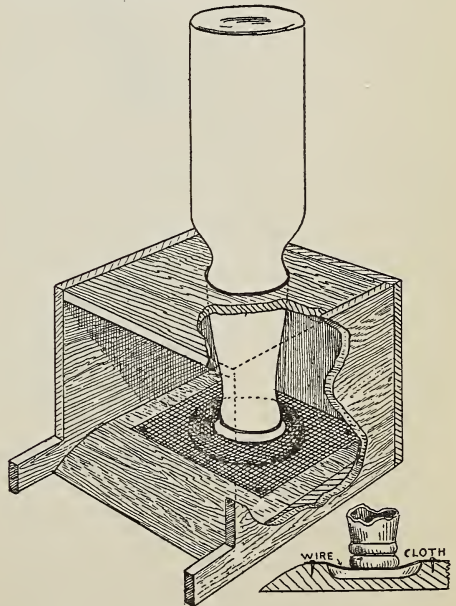
If she had been a virgin, there would not have been any thing so very strange about it. We should be inclined to think that the old queen had been superseded, and that a virgin late in the fall had taken her place. Ed.]

A HOME-MADE ENTRANCE FEEDER IN WHICH A BOTTLE IS USED INSTEAD OF A FRUIT-JAR.

I have been using Boardman entrance feeders so constructed as to permit the use of a bottle instead of a fruit-jar. I find them excellent for stimulating early brood-rearing. I usually give each colony one on taking them from their winter quarters.

As I am engaged in other business, and have to do the feeding in the evening, with prospects of snow, rain, or sunshine the next day, or possibly in a week, you can see the advantage of this feeder to me and to others so situated.

When the weather is warm enough for the bees to fly, the feed is warm enough for them to take. I have used milk-bottles, both quart and pint, with good results. It is very important that the wire screen be used for the bottle to rest on, to prevent bees from being drawn in when the bottle is taking in air and letting down the feed.



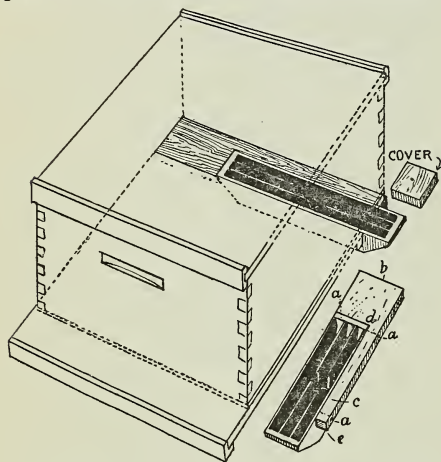
To the bee-hunter who has not yet found his tree, and wants to hold his line over Sunday, or for other reasons, he will find it very convenient, by arranging it so only two or three bees can get feed at once.

Bradford, Pa., Feb. 11. J. S. BROWN.

[It is possible that a bottle with a small-diameter mouth would work better than one with a wider mouth like a Mason jar. At all events, wire cloth could not be used with the wide mouth.—Ed.]

SIMPLICITY FEEDERS ADAPTED TO THE ALEXANDER PLAN OF FEEDING.

I have been using the Simplicity feeder as a bottom-board feeder. The addition necessary (see drawing) is a piece of wood $\frac{1}{4}$ by $2\frac{1}{2}$ in., the same length as the width of the hive. Part of the piece is cut away to make it fit across the end and along one side of the feeder, except that there should be two inches of the feeder projecting from the end. The piece is fastened flush with the top of the feeder by three nails, *a, a, a*. In putting on this feeder, slip the hive back $2\frac{1}{2}$ inches, past the bottom-board, and secure the feeder



by driving one point of a crate staple in each side of the hive so the lower point will slip tightly under the $\frac{1}{4}$ -inch strip at either end. This holds the feeder securely. It only remains to put a small block of wood on the part of the feeder that extends past the side of the hive, and it is ready for service.

West Va.

K. C. A.

[The suggestion here given is entirely feasible. As there are many old Simplicity trough feeders in use the Alexander idea can be carried into effect very easily and with but little expense.—ED.]

GOGGLES INSTEAD A BEE-VEIL.

I have wondered you do not make cheap spectacles with gauze or cloth around the outside protecting the face an inch or so around the eyes. A veil is a bother. A sting anywhere else than the eyes is of little consequence. I get it on or near the eye about once each year, and then I must hide away from society for a day or two—rather awkward sometimes. If there are such glasses anywhere I should like to get a pair.

Granby, Que.

JOHN D. ELLIS.

[We would suggest that you use the ordinary goggles that thrashers use to keep chaff out of the eyes during the harvest season. If you want something a little better and more expensive, the automobile goggles that are sold at the automobile stores would probably meet your requirements more satisfac-

torily. You can get these in all shapes and styles, prices ranging all the way from \$1.00 to \$5.00 a pair.—ED.]

KING BIRDS NOT PESTS ABOUT AN APIARY.

Mr. Doolittle, on page 90 of the Jan. 15th issue, last, gives the king bird a rather bad name. What he says is probably true; but this is only one side of its character, and may do the noble little bird a great deal of needless harm. I think the readers of GLEANINGS should be informed of the other side of its character. When one is shot on suspicion its stomach contents should be examined to make sure that the suspicion is well founded.

I would not be without a pair of king birds in the summer for more than the price of a hive of bees. They drive away the crows and hawks which would make sad havoc among the small birds' nests and chickens, and I also notice that what few English sparrows have escaped my gun immediately decamp on arrival of the king bird in spring, greatly to the relief of the eave swallows.

Of 281 stomachs collected by the United States Biological Survey, only 14 contained remains of honey-bees. In these 14 stomachs there were in all 50 honey-bees, of which 40 were drones, 4 workers, and the remaining 6 were too badly broken to be identified as to sex. The larger part of its food consists of injurious insects, among which are robber-flies, which is one in its favor for bee-men, as robber-flies kill large numbers of honey-bees.

All bee-keepers who are interested should get Farmers' Bulletin No. 54, entitled "Some Common Birds in their Relation to Agriculture," U. S. Department of Agriculture, or "Birds of Ontario in Relation to Agriculture," Ontario Department of Agriculture, Toronto. Either one, I think, can be had in their respective countries for the asking.

A. K. WHIDDEN.

No. Bedeque, P. E. Island.

A GOOD FLOW FROM HONEY-DEW; SHOULD IT BE USED AS A WINTER FOOD?

The honey-dew has been a continuous flow all this season. It drips on the sidewalk every night in large quantities. I never saw the like. It commences June 1. It gets stronger as the season advances. Is it the same there?

J. W. BAKER.

Stevensville, Mont.

[Some seasons and in some localities honey-dew is very abundant—so much so that it falls in a spray on the sidewalks under the trees. The bees will work on it strongly. For brood-rearing it is as good as any sweet; but it is hardly safe to leave it in the combs for winter. If your bees are storing it you had better take the combs containing it out and use them for brood-rearing next spring. In the mean time, feed sugar syrup after giving other combs. This should be done at once.—ED.]



OUR HOMES

by A. I. ROOT

And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul.—GENESIS 2:7.

CONSUMPTION—IS IT CURABLE?

From the book referred to elsewhere, entitled "Uncooked Foods," I learn that a distinguished doctor, in addressing a gathering of one hundred physicians in the city of New York, spoke as follows:

"There is nothing dawning upon the profession with more certainty than that medicine as a curative agent is passing. The most learned men are depending less and less each year upon drugs as a means of combating disease. The best men in the profession are changing both their views and their practice. For many hundred years consumption has been treated with drugs, and nobody has ever been cured by them. To-day we send patients into the open air, where they are kept winter and summer, sleeping in tents, and they get well."

I believe the above is correct. We find our physicians talking it; magazines are full of it; our daily papers and periodicals of every sort have more or less to say in regard to "God's medicines." With this preface I wish to submit to you a letter from a gentleman who was cured of a bad case of consumption more than thirty years ago. As he is alive and well to-day we shall have to decide he knows something of what he is talking about:

Friend A. I. Root:—It is a long time since I wrote you, but I read your journal just the same, and keep in touch with your sayings and ideas. We are in intense harmony in many things. Keep up your crusade against rum and vice and fake advertisements.

Some thirty years ago I had the consumption, and I am sure my experience will be of much benefit to you. You know nothing succeeds like success, and I surely have that to offer you. I had a severe attack of pleurisy; and when still ailing I was in prudent enough to oblige a friend (Mrs. Judge O. C. Pratt of California) by donning my "glad rags" and going to a ball at the Academy of Music in company with her and my wife. She wished to see some of the sights of New York city, and get introductions to Jim Fisk and Wm. M. Tweed—persons she knew I was acquainted with. There were thousands there. It was one of the American Club's most brilliant efforts. It did not save me from an attack of pneumonia, however, which came on with great severity some three hours after we reached the Academy. I kept my bed in a sitting position for weeks, and when I did get up and out my friends thought my days were surely numbered. I will give you one incident for you to judge by.

Dr. Gilbert H. Todd, a dear friend, a man of extremely robust build, vigorous health, and kind heart, when I went to his office to have a tooth filled said:

"I will simply prepare it and fill it with a temporary filling, and you must come when I am not so very busy, and I will carefully fill it with gold then."

It was nearly two years before I went there again. I saw he did not recognize me. When his patient left I spoke and he immediately recognized my voice and said, "Why, I did not know you. Where have you been?" I told him. He then told me when I last came to him he was desirous of saving me pain and misery, as he thought I could not possibly live more than a few months. I left my business in New York city and went to Portland, Ct., to take charge of a factory there. My city doctor was willing I should go—fresh air, etc., you know. I made the acquaintance of a doctor there named Hammond, a man about 50 years of age. I consulted him as to my case. He said I

would have to follow his instructions to the letter if he doctored me. His examination disclosed the fact that my left lung was in a badly tuberculous condition, and my right lung affected slightly. At the time, I was clad in porous chamois under-clothing, and my neck and chest in much the same condition that I imagine your sister's is after treatment such as you describe in GLEANINGS, which induced me to write you. I was using various valuable ointments and internal medicines my city doctors prescribed, and which I then believed were infallible as to selection, and was shocked when he informed me I was *dirty*, and that such medicines were not suited to my case. Consumption is a disease that causes one to think he is not so dangerously ill. I did not. I could not speak a word without its causing me to hack immediately afterward. It was then cold weather; and as I was all bundled up in furs Dr. H. said I could not go without them at once, which he much regretted. He said I should not have put them on early in the fall. "Oh, my! I thought I *must* bundle up and not catch cold," I said. He thought otherwise.

Now for his treatment, and the only true one. You will believe it because of your baths and the vigor derived from them as described so graphically by you.

He said, "Take off those chamois and substitute good warm flannel under-clothing, first using plenty of warm water and soap to cleanse your skin and remove the ointment, etc., from your pores. Now, every morning when you get up have a large basin of cold water and a sponge provided, then bathe thoroughly your arms; raise the goose flesh, then use a coarse towel until they are warm and red; then repeat the same formula with your chest, then the back, etc., until the whole body is gone over. Do this by *installments*, as I describe, and not in a bath run."

He said that, in my weak condition, I could not stand the removal of the amount of heat from my body that a bath of fresh cold water would take. As to diet he said I might eat almost any food I craved, but he wanted me to *try* to eat all the fat food I could. He wished me to show a gain in flesh, even if but a slight one. When I gained the first pound, he told me if I followed his instructions to the letter I would *get well* and I did. I ate as much as I could of the hard white fat in roast beef. He prescribed a good quality of pure cod-liver oil, a tablespoonful after each meal, and I was to follow it with a pinch of salt, as that removes all unpleasant taste, and you can take it much longer before it goes against you (and you stop taking it for a week or two). I asked him if cod-liver oil was good to cure consumption. He said *no*. "Then why do I take it?" To make blood, even if it is poor blood at that, into which it is converted by the system in three or four hours."

This poor blood is to supply matter readily (which it will do); then when you cough there is but a slight effort required to "raise" this matter, and the lungs are not strained, and can heal. You know those exhausting coughing-spells consumptives have. Another reason for taking it was, I had a meal in me in case my appetite was light. He furnished me with a tonic, which he changed from time to time, to stimulate my appetite, as he informed me. The bowels were to be kept free. I used daily a nasal douche. The liquid was a small quantity of crystal carbolic acid put in water. A good portion of this will remain up the nostrils until you lean over, when it will run out. I left this there for several minutes to cleanse the air-passages in the head. My throat was in such a bad condition (irritated) he said I would have to stop shaving, and wear all my beard, which I did for a number of years. As I could not do justice to bathing and a vigorous use of the coarse towel at first, which he was desirous of my doing for the exercise and great benefit he claimed I would derive from so doing, I had a strong attendant do it for me at first. I asked Dr. Hammond how it was that he was so skillful in the treatment of consumption. He said he had a large practice in New York city, and was sent up to Rocky Hill, Ct., to die. His arduous duties in attending to his patients had about exhausted all his vitality. He was a stout vigorous man when he treated me so successfully. I am now over 68, and have no lung troubles.

My daughter, A. R. Austin, is one of your customers. I am no apiarist. I get stung now and then, so you see I do know something about bees, and I read her journals and find them good instructive reading.

Dr. Hammond said that, in pulmonary complaints, the pores of the skin must do the work of the lungs, and nothing must be done to interfere with their natural functions. You know the dandy said, when the minister was reading his marriage ceremony, and came to "honor and obey," "Jus' read dat ober agin'."

to de lady." This will apply to this last paragraph of my letter.

Hoping you will continue your good work and interesting writings, also vigorous health, I remain

Yours truly, THEO. P. AUSTIN.
Egypt, Me., Sept. 4.

T. B. Terry, in a recent issue of the *Practical Farmer*, says:

Letters like the following make us thankful we can tell the story of simple, wholesome living to so many. It is from a friend living in Chester County, Pa.: "I feel that I can not better celebrate my sixty-first birthday than by writing thee a letter of thanks. Six weeks ago I was visiting friends where the *Practical Farmer* was a part of their household. While looking over its columns I became deeply interested in 'Health Hints,' especially the one telling about intestinal indigestion. I was at that time under the care of a doctor for this trouble. I resolved I would try thy simple advice. It proved effectual, and I can not express in words my thankfulness for what it has done for me. I am now entirely well. I have always been an advocate of fresh air, pure water, etc. But since reading thy articles I am carrying all these things out better. I would rather miss my breakfast now than my morning cool bath. If many more would follow thy plain teachings what help they might obtain! By the way, what evil air there is breathed in the house of worship! I have come to the conclusion I will not ask my lungs to endure such air. I can worship God without in a measure committing suicide. Without multiplying words, I wish to say I can endorse every word thee puts in print. Go on with the good work. I rather prefer not to have my name given, but publish it if thee thinks best." Thank you, my good friend. There is no question that much harm is done by the impure air in churches. I have avoided it for the most part during the last four years; this, of course, for the season when windows are closed. Much sickness is caused and many lives prematurely snuffed out by church and schoolhouse air, where so many people are collected together and so little attention is paid to ventilation.

Now there is something in regard to this matter of pure air in churches that troubles me. Those who are well and strong, perhaps do not mind the bad air in many churches. Possibly they are not injured to any great extent by it; but it is one of the great trials of my life to be obliged to remain in a crowded audience with insufficient ventilation, or, worse still, no ventilation at all. Even in California or down in Florida, with large trees laden with orange-blossoms right near the church, all windows would be closed, and the minister would be preaching, or trying to preach, to a drowsy audience. Of course, this is not always the case, and I think a reform is coming. Many of our churches and public buildings are not planned so as to permit a perfect ventilation; and where they do admit of it, the managers, in their endeavors to save fuel, keep the windows closed, or nearly so. Please consider, friends, that there are more or less old people in every Sunday audience; and there are more or less people with poor health there—perhaps disease among them. If there are any who ought to be on hand to listen to a message from the man of God, it is the older ones and the ailing ones; and these, of all others, need an abundance of fresh air. I hesitated somewhat about talking up this subject, because I feared it might encourage some, who are looking for an excuse, to stay away from church. God forbid. I think I should prefer to take my chances of dying a little sooner than to stay away from church. Although he does not exactly say so, I am

afraid our good friend T. B. Terry, notwithstanding the great influence that his presence or absence might exert in any community, has been staying away from church because the ventilation is bad.

Attention has already been turned to this matter of ventilation in our public schools; and I hope and pray that the time is fast going by when these little ones shall be scolded for getting restless and uneasy, and wanting to be out in the open air, when intelligent ventilation might not only quiet them, but help them to be well and happy. Dear friends, will you not make it your business to do all you can to have good ventilation, both in the schools and churches in your neighborhood?

UNCOOKED FOOD—SOMETHING MORE ABOUT IT.

While I am quoting from T. B. Terry I wish to make another quotation from the *Practical Farmer* of Aug. 10. It answers the question that a good many of us have been asking, whether T. B. Terry is *still* living on grains, nuts, and fruits, uncooked:

It is quite possible that the great point is that one must chew the dry flaked wheat, with a little butter, far more than people do chew soft cooked wheat. A great deal more saliva is mixed with the starch as a result, and digestion is therefore more perfect. Personally I now like the dry wheat better than the cooked, and certainly as well as I do the best of bread and butter. It is better than the best whole-wheat bread, because it is absolutely pure wheat and nothing else, the simplest and most natural food. Eaten with unsalted butter I like the wheat, enjoy my meal greatly, and there is no danger whatever of overeating. With salted butter one must use judgment as the salt stimulates the digestive juices and appetite unnaturally. For a long time I have eaten dry wheat and butter and fruit only for breakfast when at home. The results have been entirely satisfactory. I never enjoyed meals more or was in better shape for a hard day's work of brain or muscle. These are facts, not theories. In February I bought a case of Pettijohn's flaked wheat, 36 boxes of a pound and a half each. The cost was \$3.75.* It will last about a year. No expense for fire to cook it. Takes about a minute to get breakfast.

IS CANCER CURABLE?

This matter came up because several have written me asking my advice in regard to the treatment of cancers. I made inquiries of several friends who have been thus afflicted, and I began to think there was no remedy I could *recommend* except a surgical operation; and many times this seems to offer only temporary relief. While considering the matter the following came to hand in a private letter from a friend in whom I have

*Now, look here, friends, do not go over this matter too hastily. Mr. Terry tells us about buying Pettijohn's flaked wheat, *enough for a year*, for \$3.75, or practically one cent a day. Will people who have found it a hard matter to furnish provisions and "make both ends meet" take notice of this? And that is not all. "It takes about a minute to get breakfast." I know this is true, for I have got many a breakfast of that sort myself. How about the saving in time of the good housewife? or, if you choose, saving the expense of a hired girl? Just now the hired girls are coming pretty near to a strike that may be almost as far-reaching as that of the telegraphers. If the girls will not work for reasonable wages, and be decent while they are about it, can't *we* get on a strike and live on wheat, and get along without hired girls—at least until they begin to be "hungry" for a job? Are we as a people ready to learn the lesson the great Father is striving to teach us?

great confidence. Read it and see what you think of it:

Friend Root:—Just a little more while I am about it. Some good people have cautioned me, thinking I was assuming that man could do too much. But I believe the human soul is a little spark of the Almighty. If we only do our part God will not fail to do his. Now, I am enthusiastic from many experiences too strong to tell of. But I can't keep them from making my words quite positive. Let me give you one case quite briefly.

A poor woman had cancer in the breast. She kept it to herself too long. At last she went to a specialist who told her an operation was her only possible help, but it had been delayed too long, and he couldn't promise success. In mortal terror she wrote me, saying she would do just what I advised. It was a hard situation, but I did not hesitate an instant. I told her I would see her safely through even if I had to give up all other work—not to have another fear. She is bright, and her faith was absolute. At once I put her on a diet that by no possibility could have any thing impure in it—two quarts a day of pure rain water; exercise of the muscles of the breast, etc. In three months I sent her to the specialist in the city, whose surprise was great, and he frankly said that the cancer for *some reason* was fading away! But not a word did she tell him. How I used to dread to open her letters! I was certain, but so afraid she would not stick to the course that put no more bad in, and helped nature to work out what was there. But she was more than faithful. In her last letter she says she can't report any more, as there is nothing left to report about. This was after about fourteen months, and she is a happy woman. Of course, you know I never took a cent from her. But this isn't the reason that this report is strictly private. I can't stand the strain of such individual responsibility at long range. We have such cases in nearly all lines now, where bright people have worked out their own salvation. Do you wonder I am in deep earnest?

July 29.

On receipt of the above I wrote at once, asking permission to use the letter in print. Below is my friend's reply:

Dear Mr. Root:—I have been busy, so please pardon delay. Use my letter to you, if you please, but only in a way that I may remain unknown, and please do not refer any readers to me for personal advice. My hands are full. I have no clerks, you know, and no help. I need all my strength for leading people generally to improve on their ways of doing, to the best of my ability.

I had this woman, who had cancer coming, stop eating all meat, even chickens and eggs as they might have eaten filth in droppings of horses, etc. Pork is most dangerous; but even beef *may* not be from entirely healthy animals and I would take no chances. Butter was permitted made by herself, from tested cows that she knew were healthy. She ate pure grains, fruits, and vegetables; no tea or coffee; very little salt; drank only clear rain water, and two quarts a day at least. Cancer is an awful disease. It comes only as a punishment for serious violations of natural laws. Every trace of constipation was prevented by food and drink, and no eating when tired out was allowed, nor overeating—no possible chance for poisoning the system *any* more, and then every possible chance to help nature throw off the trouble already in the blood. This was the substance of the treatment; and, above all, she had entire faith that this was sensible and right, and that the result desired must come, and it did, thank God.

Aug. 9.

There, friends, you have in this Home paper two strong testimonials to the effect that God helps those who help themselves, and who avail themselves of the light that is now being shed all over our land in regard to how to get well and keep well. The testimonials I have given come from two parties who have been afflicted with what are generally termed "incurable diseases." May God be praised for what is being done along the line of making use of God's medicines that are all around, and within easy reach.

Temperance.

OUR GOD-FEARING GOVERNORS.

We have been repeatedly told that it is not best for even a good man who is a candidate for some great office to come out strongly against the liquor-traffic. Some good people, even ministers of the gospel, tell us that a man who occupies a prominent place can do *more good* by being careful about not going to extremes in any direction, etc. You have all heard this kind of talk, and no doubt there is much truth in it. God knows we need to exercise discretion in our zeal; but I think some great men are making a serious mistake in so carefully avoiding all reference to the revolt against the saloon business that is now going on; and we have quite a few governors who are not afraid to let every one know, right and left, what *they* think about it. I have several times referred to Governor Hanly, of Indiana, and to Governor Folk, of Missouri; and just now I am mightily stirred by a speech from the governor of North Carolina. I clip the following from a report in the *Missouri Issue*:

ADDRESS BY ROBERT B. GLENN.

I can, in a few words, tell you where I stand and how I feel on this subject. Whatever may have been my acts and course in the past, I have tried ever to be consistent. I say here and now that the last bridge is burned behind me, and I stand squarely with the great temperance forces to drive out this hideous monster from our fair State.

Not long since, I was making a speech; I told those people that I trusted the day would come when books instead of bottles would be in our men's hands, and schools and churches instead of saloons and gambling-places would be scattered the length and breadth of the State. When I finished my speech a man came up to me and said: "Look here; you attacked my business to-day. I voted for you, but I want to say I am sorry, and I will never vote for you again." I told him: "Well, my friend, I don't know that I shall ever ask for votes again. I don't know that I shall be a candidate for another office again; but I'll tell you that if I must secure votes by stifling my conscience, then, so help me God, I shall remain a private citizen for the rest of my days." The man seemed indignant.

"Don't you know that Christianity and my business can't stand together?" he said. "Won't you write that down over your own signature?" I told him, "I wish I had that statement to show to the people from one end of the State to the other, that they might see your own indictment of the traffic." Christianity and the liquor-traffic will *not* stand together. Choose ye this day whom ye will serve, God or mammon.

But some say that money derived from the liquor business is necessary to run our schools. I say it is not. The schools do not depend on blood money. Wipe out the liquor business, and, if necessary, the State can well afford to increase the tax on property and sustain the schools and save the boys and girls of this land.

I have seen prohibition that did prohibit. I have just returned from the New England States, the home of prohibition, and I tell you that, from my observation and inquiry, prohibition is a success. I traveled thousands of miles, visited the fairs in those States, and in all that journey I saw but three intoxicated men.

I thank God that North Carolina can not be called a whisky State. Already Greensboro, Charlotte, Durham, Goldsboro, Newbern, Elizabeth City, and scores of other places where liquor was sold have voted for prohibition. The people are aroused.

The time is ripe. Submit the question of prohibition to the voters of North Carolina, and I believe it will sweep the State by from 75,000 to 100,000 majority. I pledge you my earnest aid in this great fight. I will canvass North Carolina; speak in every county, and use the strength God has given me to win this battle for temperance.

Well, friends, may we not all thank God that there is at least *one* governor in the United States who is not afraid that he will hurt his influence by coming out squarely against the saloon. Only a few days ago I congratulated the editor of our *Medina Gazette* because he came out so boldly and fearlessly against the rum business. From the fact that he was, years ago, one of a lot of boys in my Sunday-school class, I felt unusually proud in witnessing his boldness for the right. When I congratulated him on having the courage to come out squarely and fearlessly against the crowd that was displeased at his utterances, he replied something as follows: "Why, Mr. Root, I supposed I was right in with the popular and winning side. Am I not right about it?"

I replied, "Well, Harry, I thank you for the rebuke. I honestly believe that you are just now with the winning side."

Now, friends, are not Governor Glenn, Governor Hanly, Governor Folk, and all the rest of them, right in with the winning side, and far in advance of some of those who are afraid to mention the conflict now going on between total abstinence, if you choose to call it so, and the rum devil? Shall we not, as a people, stand back of them and hold up their hands by our *prayers* and our *votes*?

"LIKE A PRAIRIE FIRE, WITH NO HAND
RAISED TO STOP ITS PROGRESS."

It is a little funny to notice what exceedingly interesting reading we find in many of the liquor papers. Below I give a quotation from a recent editorial in *Beverages*, the national organ of the liquor league:

The result in Georgia presents no pleasant outlook for any action of the business. That State, in its judgment, has treated all alike, and no false notion that beer is a temperance beverage and should be allowed to hold on has been entertained or brought forward. We dislike to acknowledge it, but we really believe the entire business all over has oversayed its opportunity to protect itself against the onward march of prohibition, which in some sections of the country is advancing like a prairie fire, with not a hand raised to stop its progress.

May the Lord be praised once more, and especially praised for the facts they furnish us, showing us that there is *really* "not a hand raised to stop its progress."

Here is something further from the *Baltimore News*:

ATLANTA NOT LOSING; STORES TAKING THE PLACES
OF SALOONS, SAYS MR. LEVERING.

Banks, groceries, and furniture stores are fast taking the places once occupied by saloons in Atlanta, Ga., according to Mr. Joshua Levering. He says that all places made vacant by the closing of the saloons by State prohibition are being leased by the real-estate men as fast as they become empty. He said:

"There has been a good deal of talk about Atlanta suffering a real-estate loss because of the closing of the saloons. As a matter of fact, no such loss has been felt. The vacant saloons are being replaced by groceries, furniture stores, and, in some cases, banks. The real-estate dealers say that every building now occupied by a saloon will be rented by January 1, when the saloons must close."

THE STAINLESS FLAG AND HOW THEY HELP ALONG.

Dear Bro. Root:—I received the 100 copies of the *Stainless Flag* several days ago, and distributed them at once. They came in a good time, as we were

in a hot battle over the saloon question. It was settled yesterday in favor of the Christian people. The report is that we gained the election by 84 vot s. We have had two years of prohibition, and our country has enjoyed peace and prosperity. You would be surprised to see the records as to how the money has accumulated in Llano in this short time. The jailer has been put out of a job. In fact, it is much better than I expected. May the Lord bless you for the efforts you are making to get rid of the rum devil. It is sending more souls to perdition than any other curse that I know of. I can't see how any one of sound mind could claim to be a Christian and hold up such a curse. It is the most unholly fruit that I know of. I will do all I can to get GLEANINGS in every home of our Association. Trust in God and he will take care of us.

Llano, Texas., Sept. 8.

L. L. SKAGGS.

HAVE THE SPOTS ON THE SUN HAD ANY THING TO DO
WITH THE CHANGES IN THE WEATHER; SOMETHING
DIRECT FROM THE CHIEF OF THE
U. S. WEATHER BUREAU.

Mr. Root:—Referring to your letter of the 31st ultimo, inclosing a clipping from *The Woman's National Daily*, of St. Louis, Mo., on the subject of sun spots and the weather, I beg to say that I doubt very much whether Prof. Garriott made the statements attributed to him. The Weather Bureau has for some years conducted a vigorous campaign against the publication of weather forecasts based on the position of the planets, the spottedness of the sun, the supposed influence of the moon, etc., but it has not been able to prevent the occasional appearance of articles such as the one you inclosed in your letter. It is needless, of course, for me to tell you that the Weather Bureau in its forecast work does not pay any heed to the condition of the sun; in fact, its forecast officials are in utter ignorance as to whether the sun spots are present or not. Numerous attempts have been made to correlate the spottedness of the sun with terrestrial weather, with doubtful success. A single exception, however, may be noted: viz., there appears to be a connection between the periodicity of the sun spots and the number and violence of magnetic and electrical storms on the earth—that is, the greatest number of sun spots occurs simultaneously with the greatest number of electrical and magnetic displays on the earth; but whether the latter are the result of the former, or whether both result from a common cause, is not known.

Very respectfully,

Sept. 6.

WILLIS L. MOORE,
Chief U. S. Weather Bureau.

FAVORABLE LOCALITIES FOR PEOPLE AFFLICTED
WITH RHEUMATISM.

Dear Mr. Root:—Please tell your rheumatic readers that the mild, dry, sunny climate you advise can be found in the Sand Hill section of Moore Co., N. C., and that there are seven towns within a radius of ten miles in that section where board, furnished rooms for light housekeeping, and cottages can be obtained with prices to suit the purse of the millionaire, the day laborer, and all between.

JENNIE P. WELLS.

Roseland, N. C., Sept. 10.

Your answer to Mrs. Buchanan on page 1168, I think is a little strong. Old residents *occasionally* are afflicted, but I never hear of fishermen or those that are in salt water a great deal being afflicted. When Jesse leaves the coast he gets worse; if he is in the water about every day he doesn't feel the rheumatism. He is working on the dredge-boat now, and is getting fat and doesn't feel the rheumatism at all. Our nearest doctor is at Sarasota, and has been in this vicinity but once in two years.

I. T. SHUMARD.

Osprey, Fla., Sept. 11.

KIND WORDS FOR OUR TRANSPLANTING-MACHINE AND
STRAWBERRY-BOOK.

The transplanter came in due season, and it works like a charm. The plants keep right on growing, never knowing they have been moved, even in the hottest weather. I inclose \$1.25. I wish to thank you and Mr. Terry for the many pleasant hours I have spent in reading and rereading the *ABC of Strawberry Culture*. It has been an inspiration to me in more ways than one. I have loaned it many times, and all express much pleasure.

A. A. BENNETT.

Bainbridge, N. Y., Aug. 28.

FOR SALE.—Golden and red-clover Italian queens. WM. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

ITALIAN BEES and queens—red-clover and golden strains. E. E. MOTT, Glenwood, Cass Co., Mich.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan, Cyprian queens. E. L. Pratt, Swarthmore, Pa.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

FOR SALE.—Bees, queens, and bee-keepers' supplies (Root's goods), at factory prices. F. W. VAN DEMARK, Mehan, Okla.

FOR SALE.—Root's bee-supplies, wholesale and retail; factory prices; catalog free. Beeswax wanted. W. E. TRIBBETT, Staunton, Va.

GOLDEN-ALL-OVER Caucasian Banat bees and queens. We book orders for early queens from our best imported breeding stock for honey, with 600 twin mating-boxes. THE SNYDER APIARIES, Lebanon, Pa.

QUEENS.—Improved Red-clover Italians bred for business; June 1 to Nov. 15, untested queens, 60c; tested, \$1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

I must say to my friends, please do not send me any more orders for queens this season, as my health is so poor I find it impossible to continue queen-rearing. Thanks to all my friends for their very liberal patronage. W. W. CRIM, Pekin, Ind.

IMPROVED ITALIAN QUEENS now ready; nuclei and colonies about May 10, Danzenbaker or L. frames; 20 years a queen-breeder; 500 colonies to draw from. Circular and testimonials free.

QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.

ANGEL'S GOLDEN BEAUTIES and his bright three-banded Italian Queens have but few equals and no superiors. A fine large queen of either strain for \$1.00; an extra select breeder for \$2.50. I have had 12 years' experience at queen-breeding. Address

SAMUEL M. ANGEL, Route 1, Evansville, Ind.

WINTER EGGS



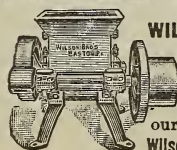
Feed cut green bone; save half your grain and double your egg yield. The

Humphrey

Green Bone & Vegetable Cutter, the only open hopper machine, is guaranteed to cut more bone, with less labor and in less time than any other. Money back if you are not satisfied. It's the one hand cutter, feed under operator's control at all times; no complicated parts. Send for catalogue and special Trial Offer.

HUMPHREY,
Mine St. Factory,
Joliet, Ill.

Make Your Own Fertilizer



at Small Cost with
WILSON'S PHOSPHATE MILLS
From 1 to 40 H. P. Also Bone Cutters, band and power for the poultryman; grit and shell mills, farm feed mills, family grist mills, scrap cake mills. Send for our catalog.

Wilson Bros., Sole Mfrs., Easton, Pa.

QUEENS

We beg to remind our customers the season for breeding queens here in Medina is rapidly drawing to a close. At present we are able to furnish all grades by return mail. Now is the best time to requeen. A young queen is more vigorous than an old one in spring, and not nearly so liable to swarm.

Prices of Home-bred Italian Queens

Untested queen.....	\$1.00
Select untested queen.....	1.25
Tested queen.....	2.00
Select tested queen.....	3.00
Breeding queen.....	5.00
Select breeding queen.....	7.50
Extra select " " 1 yr. old.	10.00

The A. I. ROOT COMPANY
Medina, Ohio

Special Notices by A. I. Root.

UNCOOKED FOODS, AND HOW TO USE THEM.

The above is the title of a book by Mr. and Mrs. Eugene Christian, price \$1.00. 151 West Twenty-third St., New York. The book has about 250 pages; and whether you believe in the use of uncooked foods or not I think you will find this book exceedingly interesting and thoughtful; and I think you will enjoy at least *certain kinds* of uncooked foods all the more from having read the book. I make the following extract from the chapter on milk and honey:

Milk and honey seem to be the only two things in existence that were made primarily for no purpose except food. All other articles upon which people subsist were created for some other purpose. All cereals, legumes, fruits, nuts and vegetables in the great scheme of nature, grow wholly to reproduce themselves; but the primary purpose of milk and honey, when they are created, is for food. They seem to have no other purpose to fulfill.

CALIFORNIA MOUNTAIN SAGE, THE PLANT THAT GIVES SUCH BEAUTIFUL "WATER-WHITE" HONEY.

We are now prepared to furnish seed, in five-cent packages, of both the black and white mountain sage. We do not know which variety is the better. The seed comes up in just three or four days, and the plant makes a very rapid growth in ordinary garden soil, furnishing a great amount of bloom. I hardly think there is any danger of its proving a noxious weed, for we have sold the seed for many years, and I never heard such a complaint. While it probably will not pay to grow any plant for honey alone, it may pay to sow sage in waste places—on your own premises, of course, where it will do no harm. and it is quite a curiosity anyhow to see this plant that has for years furnished not only tons but carloads of the most beautiful honey, in my opinion, the world has ever produced. Father Langstroth used to tell us that the far-famed honey of Hymettus came from mountainous regions, and suggested it was doubtless similar to our mountain-sage honey.

Convention Notices.

The Utah Bee-keepers' Association will meet Oct. 5 at the Utah and County Building, Salt Lake City, at 10 A. M. One of the subjects up for discussion is the proposed general revision of the bee-laws of Utah.

The fall meeting of the Middlesex Bee-keepers' Association will be held in the City Hall, London, Ont., on Saturday, Nov. 2, morning and afternoon sessions. An interesting time is expected.

E. T. BRAINARD, Sec.

The sixteenth fall meeting of the Connecticut Bee-keepers' Association will be held Friday, Oct. 11 at State Capitol, Hartford, Room 50, 10:30 A. M. Good speaking is to be a feature of this meeting, and a lively discussion of a number of topics will be of value. Our spring meeting was the largest by far in the history of the organization. Our recent field meeting at New Haven was a grand success. Come to Hartford and make the fall meeting the finest of the year. Please bring something for the apianian exhibit. We want 500 new members.

J. ARTHUR SMITH, Sec.,
Box 38, Hartford, Conn.

The A. I. Root Co.—As President Aspinwall has suggested the name of Mr. Geo. E. Hilton, Fremont, Mich., as his successor as president of the National for 1908, I take this occasion to second this nomination and bring his name before the readers of GLEANINGS who are members of the National, believing we have in Mr. Hilton the strongest and most capable candidate in the order.

Mr. Hilton has been in our State legislature two terms, been president of our State convention many times, and as vice-president of the National went to San Antonio, Texas, last year to attend the National convention.

Mr. Hilton is a fine commanding officer, apparently born to command; takes a pride in it, and is well fitted for it, having all the parliamentary rules, etc., at his tongue's end.

Hurrah for Mr. Geo. E. Hilton for president for 1908.

Fraternally,

Remus, Mich., Sept. 24.

E. D. TOWNSEND.



Owing to the numerous requests for samples of printed letter-heads and note-heads, ruled and plain, together with envelopes to match, we have lately gotten out a line of samples with prices attached. We shall be glad to send samples to interested parties. We can take care of these orders promptly.

SWEET-CLOVER SEED WANTED.

We are in the market for sweet-clover seed, both yellow and white, hulled and unhulled. We would be pleased to hear from any who have been harvesting any seed with samples, stating the quantity they have to offer and the price asked. There has been quite a wide demand for this seed the past season. We still have some white unhulled on hand but very little of any thing else. We desire to lay in a stock of seed for next season.

BRISK HONEY MARKET.

If any of our readers have a crop of choice honey not yet prepared for market they will do well to get it ready without unnecessary delay, for the market never was better in our experience than it is now. Buyers are evidently more active than sellers this year. In spite of our repeated calls we receive very few responses, and not enough honey to fill our orders. We hear of some dealers visiting the producing sections and buying up what can be found. This practice seems to become more general each year, especially

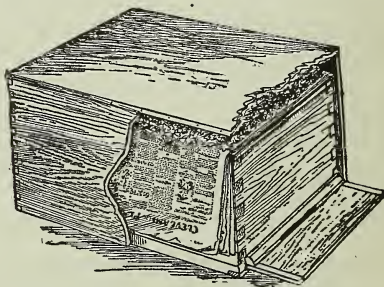
when crops are short and supply scanty. This is the best time in all the year to market comb honey. Usually the demand slackens off within a month or two from this time. We should be glad to hear of any choice lots still unsold, either comb or extracted.

AMERICAN EXPRESS CO.

Within the last three months we have secured additional express service in Medina. We now have the United States, doing business over the B. & O.; the American, on the L. E. & W., which is one of the New York Central lines, and the Electric Package Co., operating over the suburban electric lines. This additional service will be an advantage to all patrons who have only the American Express Co. at their shipping-point.

PARCELS POST.

The increased express facilities which we can offer from Medina are a gain, but nothing to be compared to the advantage of a parcels post as a department of the United States postal service. It is a shame and a disgrace to our country, which in many things is so progressive, that we should be so far behind Europe in postal facilities. When John Vanamaker was postmaster general he said there were four great objections to the parcels post—namely, the Adams, American, United States, and Wells-Fargo express companies, and I guess there is little question that we should have had parcels post years ago if it were not for the opposition of the express companies and those working in their interests to maintain their present monopoly of the package-carrying business of the country. There are more and more people awakening to the oppression of the express monopoly, and demanding the relief which the United States government is able to give through a parcels post. To oppose the parcels post is to obstruct progress and development in our country.



TELESCOPE CAP FOR WINTER PROTECTION.

The above illustration shows a very satisfactory method of protecting bees over winter in single-walled hives. This same cover, listed as K in our catalog, is also a great protection in the fall and spring, especially the latter when bees are building up ready for the honey-harvest. We have known cases where enough additional honey was secured because of this added protection to pay the price of the covers in one season. The rim is 11¼ inches deep, and the top is covered with galvanized steel. The price, nailed and painted, is 80 cts. each, 8-frame; 85 cts., 10-frame. In flat, 62 cts. each; \$3.00 for 5, 8-frame; 65 cts. each, \$3.10 for five, ten-frame. Where this cover is substituted for the regular cover on a single-wall hive, a light super cover should be used in connection with it. Price of super cover is 15 cts. each, \$1.30 for 10.

CHANGES IN PRICES FOR 1907-8.

Up to this time we have determined on the following changes in list prices. During the past season we have worked off our surplus stock of No. 2 plain sections so that from this date forward, until further notice, the price on B grade or No. 2 plain sections will be 25 cents per 1000 higher than the rate given in our catalog.

We cut out the dozen rate on No. 30 wire on spools, and increase the 5-lb. coils to \$1.00 each.

B. P. S. paint for hives is advanced to \$1.75 per gallon; 90 cts. per ½ gallon; 50 cts. a quart; 30 cts. a pint.

Painted wire cloth is advanced to 2½ cts. per foot for cut pieces; 2 cts. in full-roll lots. Galvanized wire cloth, 8 mesh, is advanced to 8 cts. per sq. ft.

The A B C of Bee Culture, very greatly enlarged and improved, printed on enameled paper, is advanced to \$1.50 postpaid; \$1.25 with other goods by freight or express. The new edition will not be completed till November. Half-leather editions will be \$2.00; full leather, \$2.50.

There has been an advance of over 30 per cent in material for bee-veils, and new prices are adopted as follows: No. 1, all silk tulle veil, 90 cts.; No. 2, cotton tulle with silk face, 60 cts.; No. 3, all cotton tulle, 50 cts.; No. 4, mosquito-bar veil, 30 cts.; bee-hat, 30 cts.; silk tulle per yd., 60 cts.; cotton tulle per yd., 25 cts.; mosquito-bar, per piece of 8 yds., 75 cts. No change in globe veil.

EARLY-ORDER CASH DISCOUNT.

We have been obliged to cut down the early-order cash discount below that offered in former years; but it is still sufficiently liberal to pay transportation charges quite a distance, or to pay liberal interest on the money invested in supplies early, and should attract those forehanded people who know pretty well what they want for the coming season.

The following is the schedule of discounts for early cash orders for bee-keepers' supplies, subject to the conditions below:

For cash sent in	October,	deduct	5 per cent.
"	"	November,	4% "
"	"	December,	4 "
"	"	January,	3½ "
"	"	February,	3 "
"	"	March,	2½ "
"	"	April,	2 "

The discount is only for cash sent before the expiration of the months named, and is intended to apply to hives, sections, frames, foundation, extractors, smok-

ers, shipping-cases, cartons, and other miscellaneous bee-keepers' supplies. It will not apply on the following articles exclusively; but where these form no more than about one-tenth of the whole order the early-order discount may be taken from the entire bill: Tinned wire, paint, Bingham smokers, Porter bees-capes, glass and tin honey-packages, scales, bees and queens, bee-books and papers, labels, and other printed matter, bushel boxes, seeds, and other specialties not listed in our general catalog.

GOSPEL HYMNS AT HALF PRICE.

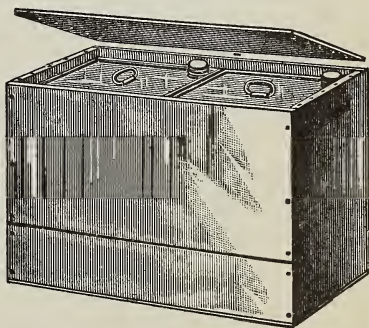
If any of our readers know of a mission church or Sunday-school, or Christian Endeavor Society, in need of singing-books we are in a position to do them some good. We formerly sold large quantities of Gospel Hymns, and have left in stock several lots of desirable books which we will close out at about half price.

We have 51 copies of Christian Endeavor edition of Gospel Hymns No. 6, words and music, board covers, which sold at \$35.00 per 100. We offer them to close out at 20 cts. each, \$2.00 per doz., or \$7.50 for the lot. We have also 14 copies of Gospel Hymns No. 6, which sold at \$30.00 per 100. This is the same book, except that the C. E. edition has a few extra special C. E. songs in it which are not in the other. We offer these at 20 c. each \$2 for the lot. Postage extra in each case 5 cents each if sent by mail. Of Gospel Hymns Consolidated, Nos. 1, 2, 3, 4, words only, large-type edition, board covers, which sold at \$20.00 per 100, we have 23 which we offer at \$1.50 per doz., \$2.50 for the lot; by mail, 15 cts. each. Small-type edition, limp cloth covers, which sold at \$10.00 per 100, we have 46 copies which we offer at 80 cts. per doz., \$3.00 for the lot; 8 cts. each, postpaid.

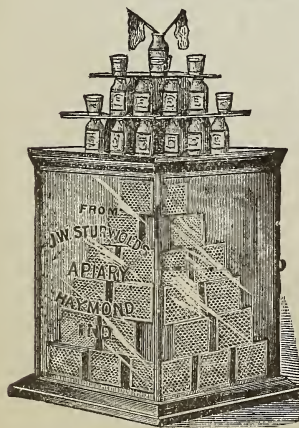
HONEY-PACKAGES IN TIN

This cut shows a box of two 60-lb. tin cans, which is the standard package for storing and shipping extracted honey. It is far superior to barrels, because there is not the same chance for leakage, or taint from the wood; and, being square, they economize space. Owing to light honey crops, the last two years, the demand has been light, and we have a good stock bought below the prices ruling at present. To reduce this stock we will ship from Medina any orders mentioning this notice at the following special prices: One box, two cans, 80 cts.; 10 boxes, \$7.50; 25 boxes or over, at 70 cts. a box. One box of one can, 50 cts.; 10 boxes, \$4.50; 25 boxes or more, at 42 cts. a box.

One-gallon square cans with 1¼-inch cap, 100 in a crate, at \$10.00 per 100; 500 or over at \$9.00 per 100; packed 10 in a case at \$1.35 per case; 10 cases, \$12.50.



Sturwold's Show-case.



This case is 28 in. high, 20 in. square, outside measure, top and bottom. The glass of which it is made is 16×24. The case is to be set up in any grocery, drug-store, or any other place of business where you want your honey exhibited or sold. The frame is of chestnut, filled and varnished, and finished in natural grain. Price, plain, \$5; with name and address, \$5.50. As the glass is very apt to be broken in transit, we will ship them, if you prefer with glass boxed separately, at same price. In flat, no glass or finish, \$2.50; glass included, \$4.00.

Screw-cap Honey-gate and Can-screw Wrench.



Price 15 cts.; by mail, 18 cts.

Price 10 cts.; 75 cts. per dozen. By mail, 4 cts. each extra.

We furnish the gate for 1½, 1¾, or 1¾" screw. Other sizes made to order from caps you may furnish. The wrench fits a 1¾" screw, and can be used on 1½ or smaller by bushing between cap and wrench.

When you order these gates separate from cans we can not guarantee a fit unless you send us a cap from the screw with the order.

Sample Mailing-blocks.

Price, each, 6 cts.; by mail, 9 cts. These are small wide-mouthed glass bottles, which hold ½ oz., with cork, put up in a mailing-block with top which screws on and is easily removed.

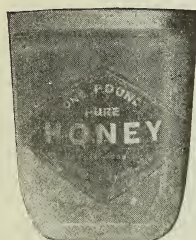
THE A. I. ROOT COMPANY,

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MEDINA, OHIO

Honey-Packages in Glass

We have quite a variety of glass packages for putting up honey for retail. We mention first our

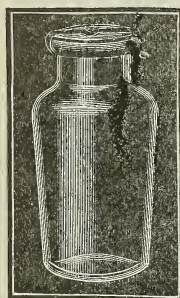


Half-pound Tumbler.

This is shown at the left with a diamond label, No. 95. These include tin cover with wax or parchment paper disk for sealing tight. No labels. Will hold 7 oz. of honey when filled; and the price, \$5.50 per barrel of 32 doz.; 5-bbl. lots at \$5.25. In reshipping-cases of 4 dozen packed ready to reship, when filled, \$1.00 per case; 6 cases, \$5.70; 20 cases or over, at 90 cents per case.

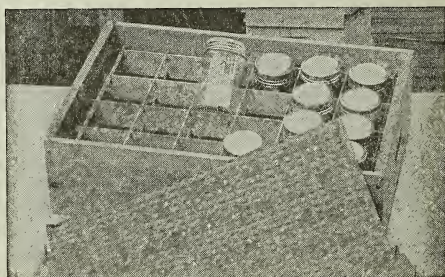
No. 25 Jar.

This holds one pound of honey; has an opal cap with rubber ring and lacquered tin screw rim which seals tight. Packed in reshipping cases of 2 dozen each; price \$1.10 per case; 6 cases, \$6.30; 20 cases or more at \$1.00 per case.



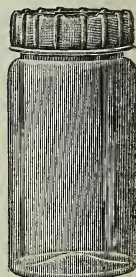
Tiptop Jar.

We keep these in two sizes, for half and one pound of honey. The shape of the jar is shown in the cut. It has a glass top, a rubber ring, and a spring-top fastener. Packed a gross in a crate at \$5.00 per gross for 1-lb., or \$4.50 for the half-pound size. We have them also packed in reshipping-cases of 2 dozen each at \$1.10 per case for 1-lb. size; 6 cases, \$5.30; 20 cases or over at \$1.00 per case. Half-pound size, \$1.00 per case; \$5.70 for 6 cases, or 90 cts. per case in 20-case lots.



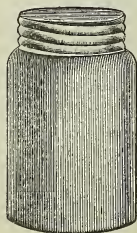
Simplex Jar.

This is one of the handsomest jars we ever handled. The factory making them was wrecked last August, and we have been unable since to secure any more of the size, which holds one pound. We can supply the next larger size, which holds 18 oz. of honey. Packed in reshipping-cases of 2 dozen. Price \$1.15 per case; 6 cases for \$6.60; in 20-case lots or over at \$1.05 per case. We still have at Philadelphia a few cases of the 1-pound size which may be had from there while they last, at the same price as above.



Sq. Hershiser Jar.

Jars.



These jars were designed for use in the honey exhibit at the Pan-American Exposition in Buffalo, and are very neat and attractive. They have cork-lined aluminum caps which seal them tight. They are made in four sizes square and three sizes round. The 1-lb. size in each style is shown in the first two cuts at the left. $\frac{1}{2}$ -lb. square Hershiser jars, doz., 50c; \$5.40 per gross

$\frac{1}{2}$ -lb.	"	"	"	55c;	6.00	"	"
1-lb.	"	"	"	80c;	9.00	"	"
2-lb.	"	"	"	1.00;	10.80	"	"
$\frac{1}{2}$ -lb. round	"	"	"	60c;	6.60	"	"
1-lb.	"	"	"	75c;	8.40	"	"
2-lb.	"	"	"	1.10;	12.00	"	"

The ordinary square jar to seal with cork, similar to that shown in cut at extreme left, is very largely used for honey. They are made in four sizes. The 1 and 2 lb. sizes are packed $\frac{1}{2}$ gross in a package; the smaller sizes one gross. Price including corks:

5-oz. square jar	35c	per dozen;	\$3.25	per gross
8-oz.	"	45c	"	4.25	"
1-lb.	"	60c	"	5.75	"
2-lb.	"	75c	"	7.50	"

THE A. I. ROOT COMPANY, MEDINA, OHIO